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DOMESTIC ENGINEERING

PLUMBING & HEATING CONTRACTING AND MERCHANDISING

Steel Houses
and Modern
Designs Show
1933 Trends

AUTOMATIC HEAT and
AIR CONDITIONING
DEALER SECTION
PAGE 81

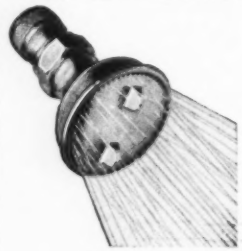
DECEMBER
1932

No matter what type of shower or where it is installed, there is a Speakman head designed just for the job.

K-3395—SPEAKMAN Anystream Self-Cleaning Shower Head (Pat. Jan. 2, 1923 and Nov. 3, 1931).

. . . For residences, hotels, institutions, apartments, public and semi-public places.

All are self-cleaning and allow the bather a choice of sprays.



K-7047

SPEAKMAN Adjusta-Spray Shower Head. Face is 2¼" across. Adjustment of sprays is obtained by turning the face of the head by the conveniently placed lugs. Turning the face still further permits the head to be flushed of all pipe scale and sediment.

JUST as Speakman led the way in making the shower the national way of bathing, Speakman again is responsible for this latest shower convenience — a head which permits the bather to have a normal, needle or flood bath from any shower.

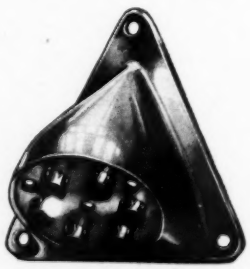
And to reach a great mass market for a head lower in price than the Speakman Anystream Self-Cleaning Shower Head, Speakman has developed the Adjusta-Spray Shower Head—smaller than the Anystream Head but easily cleaned and allows the bather a choice of coarse or fine sprays.

Literature on Speakman Anystream Shower Heads and the Adjusta-Spray Heads is available, imprinted with your name and address.

SPEAKMAN COMPANY
Wilmington, Del.

SPEAKMAN
SHOWERS & FIXTURES

K-3397—SPEAKMAN Anystream Self-Cleaning Shower Head with ⅜" I. P. female inlet and arranged to be operated with a screw driver.



K-3399—SPEAKMAN Anystream Self-Cleaning Wall Type Shower Head with ½ inch I. P. female inlet in center of back, and arranged to operate by a 5/16" hexagon wrench.

K-3416—SPEAKMAN Anystream Self-Cleaning Unit Control Triple-Cluster Shower Head with 1 inch I. P. female inlet (patented). For use where a large amount of water is desired.

Plumbers know what's best . .

That's why more than 500,000 Vogel Frost-Proof Closets have been installed

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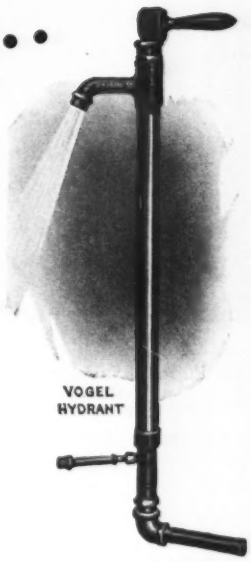
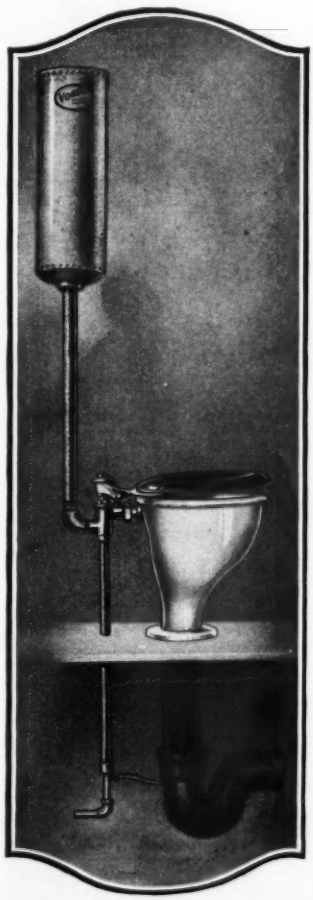


VOGEL FROST-PROOF HYDRANT



NUMBER ONE VOGEL FROST-PROOF CLOSET
Simple in operation. Sturdy in construction. Half a million in operation.

WHEN customers ask for a frost-proof closet, plumbers just naturally install a Vogel. Then they know that a satisfied customer has been added to their list, because a Vogel can never freeze, even in the coldest weather.

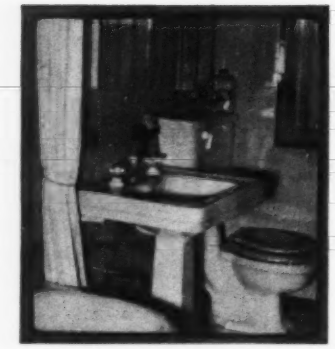
When you install a Vogel Closet there are no back calls for adjustments that eat up your profit. Vogels operate perfectly as soon as you install them. Your customers trust you to give them the best, so always specify Vogel Frost-Proof Closets and Hydrants.

Folders and blotters, imprinted with your name and address, sent promptly upon request.

●

JOSEPH A. VOGEL COMPANY
Wilmington, Delaware St. Louis, Missouri

VOGEL PATENTED *Frost-Proof* **PRODUCTS**



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WROUGHT IRON'S PITTSBURGH SERVICE RECORDS put BYERS Pipe in new Grant Building « «

IT IS merely history that in a study of the piping systems in thirty prominent Pittsburgh buildings, erected since 1847, twenty-seven used wrought iron in the majority of their different services. The unexcelled service of wrought iron in these older buildings has been the basis for specifying wrought iron in the newer structures. Such undeniable facts take the place of claims about pipe life.

Based upon an intimate knowledge of what wrought iron pipe had already done in actual service, Henry Hornbostel and Eric Fisher Wood, Pittsburgh architects, again specified Byers Genuine Wrought Iron for the new Grant Building in six out of nine plumbing services and for all heating lines.

Pipe is truly a "key material" in any building. An error in judgment when the building is planned can cost many times the initial installation through premature replacements. There is no chance of an error in judgment when the "Pipe Prescription" is based on service records.

"Pipe Prescription" is at your service

A Byers engineer will assist you in gathering records of service. He will show you how these records, combined with an individual analysis of your piping conditions, assure an economical installation. His recommendations for Byers Genuine Wrought Iron Pipe will encompass only those places where factual data in your hands can justify any recommendations you care to make to your client. Telephone the nearest Byers Office or, if you prefer, write the Engineering Service Department in Pittsburgh, for any information you desire. A. M. Byers Company, Pittsburgh, Pa. Established 1864.

New Grant Building, Pittsburgh, guarded against pipe replacement and breakdowns with Byers Genuine Wrought Iron.
W. N. Sauer Co., Pittsburgh, Plumbing Contractor.
McGinness, Smith & McGinness Co., Pittsburgh, Heating Contractor.

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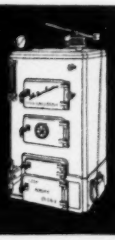
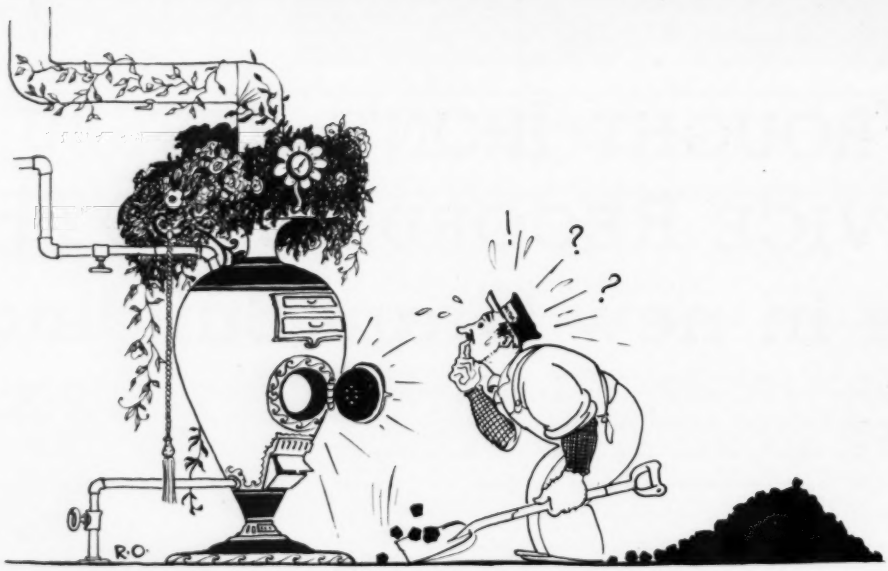
STANDARD of QUALITY for 68 YEARS · TODAY BETTER THAN EVER

MAIN LIBRARY A

Burnham Boilers





Are You Being Fooled by Dolled-up Boilers?

ALL the frills and fol-de-rols from here to Gehenna on a boiler don't help in the least to get the B.T.U.'s from the fuel into the radiators.

That being so, Burnham will continue to concentrate on *efficiency of operation*, and turn out boilers with the long fire travel that makes a short fuel bill. Their looks may not bring shrieks of joy from an artist, but their fuel savings will bring smiles to the owner's face—and more business to you.

Don't get us wrong: If the customer wants his Burnham dolled up, we provide a very neat red jacket that can look any interior decorator square in the eye. But the main thing is—"What's under the jacket?" That's where Burnhams give long-lasting satisfaction to the customer and steady profits to the contractor canny enough to sell "heat" instead of "high-hat."

Whatever the fuel or domestic firing requirement, Burnham makes a boiler. And has been making them for four generations.

Use coupon below to get data and prices.

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Irvington, New York

Branch Offices in All Principal Cities of the United States and Canada

Burnham Boiler Corp.
Irvington-on-Hudson, New York
Send me information on Burnham Boilers, as advertised in Domestic Engineering.

.....**name**

.....**address**

Actually 2 valves in 1

TWO functions test the value of a Vacuum Valve on steam radiators—ability to *vent* and ability to *vacuumize.*

The air must be let out of the radiator, freely, quickly, as the hot steam advances—and it must be *kept* out so that the steam will stay in, even when the fire is banked.

The new Warco Master 2M Vacuum Valve performs these functions as they have never been accomplished before. More *smoothly, silently* and *effectively.*

The reason is as plain as A. B. C. Warco engineers have designed a valve which is actually two valves in one. A venting valve and a vacuum valve in the same shell, but working independently of each other. Simplified action — trouble-proof — longer life.

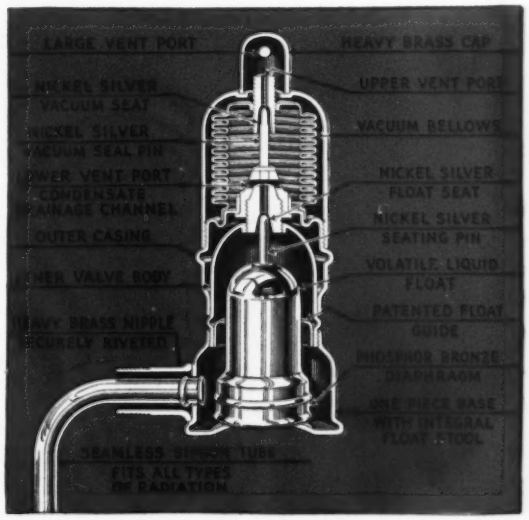
With ordinary vacuum valves, if the vacuum check sticks or the vacuum diaphragm fails, the whole valve goes out of business. The venting stops as well.

With the new Warco, if the vacuum feature should be disabled, the venting valve would continue to function 100 per cent. But the chance of disability is nil, for the entire valve is precision made—with non-corrosive nickel silver seating pins. No sticking—no hissing, spitting or leaking.

Vacuumize the one-pipe steam systems of your customers with this remarkable new Valve. You will earn their thanks and gratitude. You will give them more heat, and save quantities of fuel. Try one job and see how it works. See the profit there is in it for you. Place a trial order for a dozen of the Warco 2M's with your Wholesaler today.

W. A. RUSSELL & COMPANY ***Established 1890***
Grand Central Terminal Bldg., New York

⅓ Actual Size



Chromium-plated—distinctive in design and appearance.
Nickel silver seating pins—non-corrosive—trouble-proof.
Cannot become water-logged.
Sensitive vacuum BELLOWS—operates quickly and completely on extremely low pressure.
Indispensable where oil or gas fire burners are used.

Warco

TRADE MARK REGISTERED

MASTER 2M Vacuum Valve

D

W. A. RUSSELL & COMPANY
Grand Central Terminal Bldg., New York

Please send complete information and prices on Warco Master Vacuum Valves.

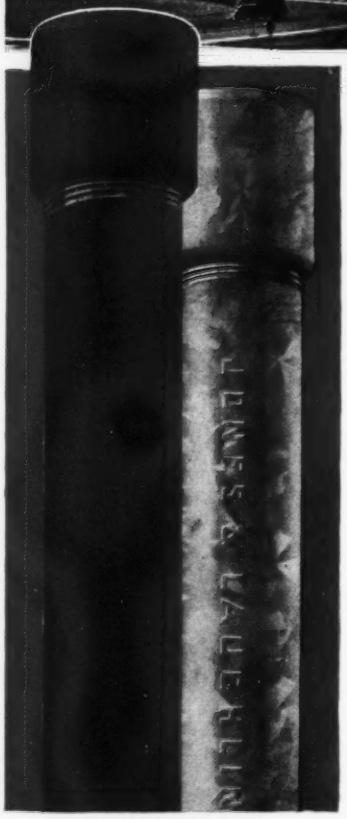
Firm Name.....

Address.....

City..... *State*.....

FOR BUILDINGS OF ALL TYPES

J&L PIPE



Representative of three types of buildings in which J&L Steel Pipe is being installed throughout the United States, are (above left) The Good Samaritan Hospital, Dayton, Ohio, Architects: Schenck & Williams; (above right) The Williamsburg Savings Bank, New York, Architects: Halsey, McCormack & Helmer, Incorporated; and (right) The Riviera Country Club, Beverly Hills, Cal., Architect: Wesley Eager.

ARCHITECTS, in selecting the materials and equipment for the buildings they design, realize the importance of specifying materials that have been proven for quality and dependability. That is why J&L Steel Pipe is so widely accepted by architects and contractors in every section of the United States. The name "Jones & Laughlin," rolled into every length of J&L Steel Pipe, is always a symbol of unvarying excellence—a guarantee of satisfaction.

Specify J&L Steel Pipe for your next project. Where piping is to be exposed to alternate wet and dry conditions specify J&L Copper Steel Pipe, which provides increased resistance to rust at minimum extra cost.

J&L STEEL

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

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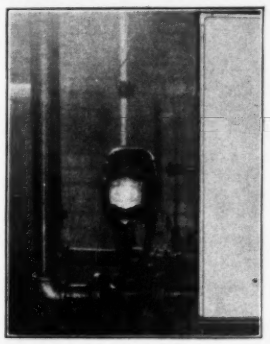
• When Winter Comes

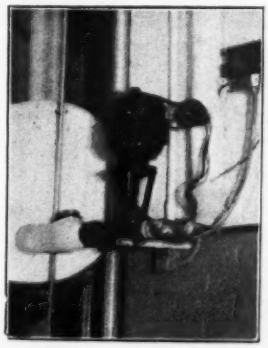
many a heating plant needs a THRUSH WATER CIRCULATOR

MADE IN THREE SIZES

The Thrush Water Circulator is entirely self-contained and shipped as a unit ready to install. It is made in 1½", 2", and 3" sizes. Installation is simple.



Thrush Water Circulator installed on a Hot Water Heating Plant assures greater efficiency and less fuel consumption with any type of fuel. It lowers boiler temperatures and provides more satisfactory home heating.



Thrush Water Circulator applied to Water Storage System reduces fuel consumption, reduces water-waste and keeps the water circulating so that the entire supply is held at the same temperature.

•

SILENT DEPENDABLE

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• WITH the arrival of cold weather you have real opportunities to get new business with the Thrush Water Circulator. There are many large jobs which really need forced circulation, and these needs are emphasized when the temperature drops. A Thrush Water Circulator can be installed quickly, with comparatively little interference in the heating of the building—and it will positively and immediately increase the efficiency of the job and insure hot radiators at the farthest point from the boiler.

On oil or gas burning jobs, you have a special opportunity this year—with everyone economizing. With the addition of Thrush Water Circulator an oil or gas fired job will burn much less fuel and give more satisfactory results. It is possible to carry lower boiler temperature and shorten the running time of the burner, which means a genuine saving.

Whenever you run into a "sick" job of any kind, think of the Thrush Water Circulator. It provides positive forced mechanical circulation, which distributes heating units throughout the plant much more rapidly than thermal circulation can do it. It is also ideal for domestic storage systems, and assures a constant supply of hot water at every faucet.

• MAIL THIS COUPON NOW!

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PERU, INDIANA

H. A. Thrush & Company
Peru, Indiana—P. O. Box No. 459

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Send us your new bulletin describing Thrush Water Circulators and complete information on the Thrush line of heating specialties. We are going after business *now*.

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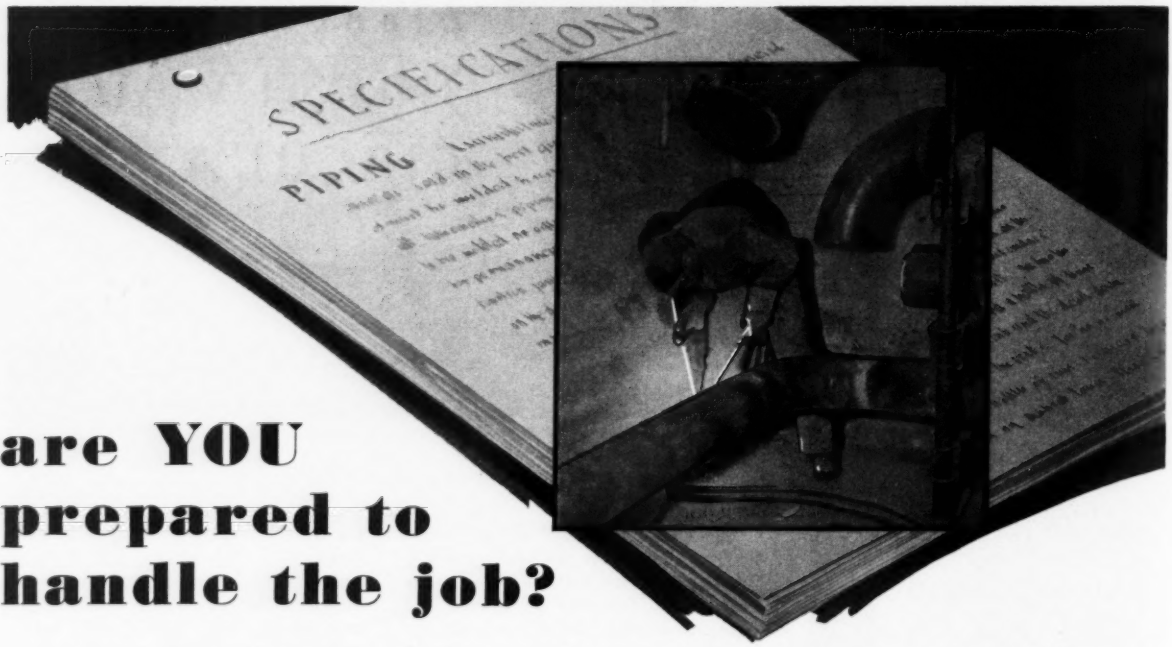
ADDRESS.....

CITY.....STATE.....

THRUSH

FORCED CIRCULATION FOR BETTER HEATING

When the Specifications say "All PIPING to be WELDED"



are YOU prepared to handle the job?

Thousands of specifications have already said "WELDED PIPING." More and more are saying it every day. Soon ALL specifications will call for it. For now that the overwhelming benefits and advantages of WELDED PIPING are established facts, it is inevitable that within a few years, *all piping from ½ in. up, in buildings of every type and size, will be WELDED.*

Forward-looking Plumbing and Heating Contractors and Steamfitters have seen the handwriting on the wall. They are prepared to handle any WELDED PIPING job. Those who are not ready are losing valuable time. If you are among them, start right now to acquire the necessary knowledge and equipment.

AIRCO, a leader in the advancement of WELDED PIPING, is ready to help you by supplying data and information, by cooperating in solving specific problems, by furnishing equipment and supplies, and by working directly with your men in making them proficient in pipe welding technique. A nation-wide organization brings these services within the reach of Contractors everywhere.

AIRCO SPECIAL No. 3 COMBINATION PIPE CUTTING *and* WELDING OUTFIT . . . . . developed specifically for Plumbing and Heating Contractors and Steamfitters, and sold on terms that leave no excuse for being unprepared when the specifications say "WELDED PIPING." The nearest District Office will be glad to give you full details. CALL or WRITE for them—TODAY.

Read "PIPING TAILORED TO FIT"—a booklet that makes clear why everyone interested in planning and making piping installations should PROMOTE WELDED PIPING. Write for your copy.

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will be a

PROFIT YEAR

for EXCELSO *Dealers*

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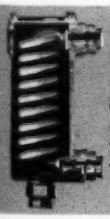
The wise dealer is an Excelso dealer. If you are not already geared up for your share of the 1933 Excelso profits, get in touch with us now!

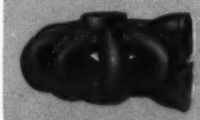
HERE'S EXCELSO'S LINE-UP OF 1933 MONEY MAKERS



Excelso Indirect Heaters

Single, Double, Triple and Dual Coil Heaters. 30 to 2500 Gallons Capacity. Deliver Hot Water to 1 or 100 Families. Sell Because They Save.

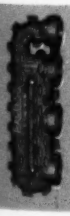
Excelso Phaeton Water Heaters



Made in Six Sizes for Domestic Hot Water Supply. Installed Above the Fire in Warm Air Furnaces or Hot Water Heating Boilers. Particularly satisfactory for Heating Auxiliary Radiation.

Excelso Fire Pot Generators

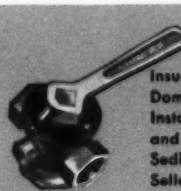
Furnish Domestic Hot Water Supply in Connection with Warm Air Furnaces and Hot Water Heating Boilers. Installed Above the Fire, so Does Not Interfere with Combustion or Care of Fire.



Excelso Fin Pin Water Heaters

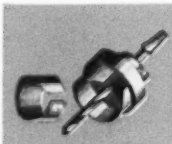
These Low-Priced and Efficient Down-in-the-Fire Heating Units are Especially Designed for Soft Coal Fired Furnaces or Hot Water Heating Boilers. The Fins Allow Circulation of Air, Preventing Deadening of Fire Around Heater.

Excelso Klearway Valves



Insure an Efficient and Clean Domestic Hot Water Heating Installation. Positively, Safely and Easily Removes Rust and Sediment. A Fast and Sure Seller.

Excelso Rotary Hack Saw Tools



Cuts 1, 1¼, 1½ and 2 inch Pipe Tap Size Holes Thru Metal or Other Material. Each Tool Equipped with Two Blades of Each Size.

FOR COMPLETE INFORMATION ON THE EXCELSO LINE SEND THE COUPON NOW!

EXCELSO
INDIRECT
WATER HEATERS

EXCELSO PRODUCTS CORP.,
57 Clyde Avenue, Buffalo, N. Y.

Please send us detailed information on the items in the Excelso line checked below.

Indirect Heaters — Phaeton Water Heaters — Fire Pot Generators
Klearway Valves — Rotary Hack Saw Tools — Fin Pin Water Heaters

NAME .....

ADDRESS .....

CITY ..... STATE .....

OUR JOBBER IS .....

OVER 5 BIG JOBS
since we
TOOK SHERWOOD'S TIP

"JUST a short time ago, we decided to take Sherwood's tip on remodeling orders. We took a Sherwood Ball Cock out and made calls upon our customers and prospects. We discovered many cases where leaky ball cocks were an endless source of annoyance and expense.

"A few minutes on our part explaining how the Sherwood closes against any city water pressure without whistling or gurgling, how it ends leaks for good and we had sold another Sherwood at an attractive profit.

"Once in the house it was easy to find other things that needed attention. We called these needs to the owner's attention and so far, we have five big remodeling jobs to credit to Sherwood's tip, to say nothing of the numerous small items we sold."

Sherwood's tip is a live one. Why don't you take it and sell more pottery, more enamelware, more brass goods, more heating equipment?

Order a Sherwood Ball Cock from your jobber today

Where water conditions are below normal and where they take a toll in wear from ball cocks, install the Sherwood Red Band (Alexoid) Ball Cock. It has been designed to meet the worst conditions in the best manner and is but slightly higher in price.

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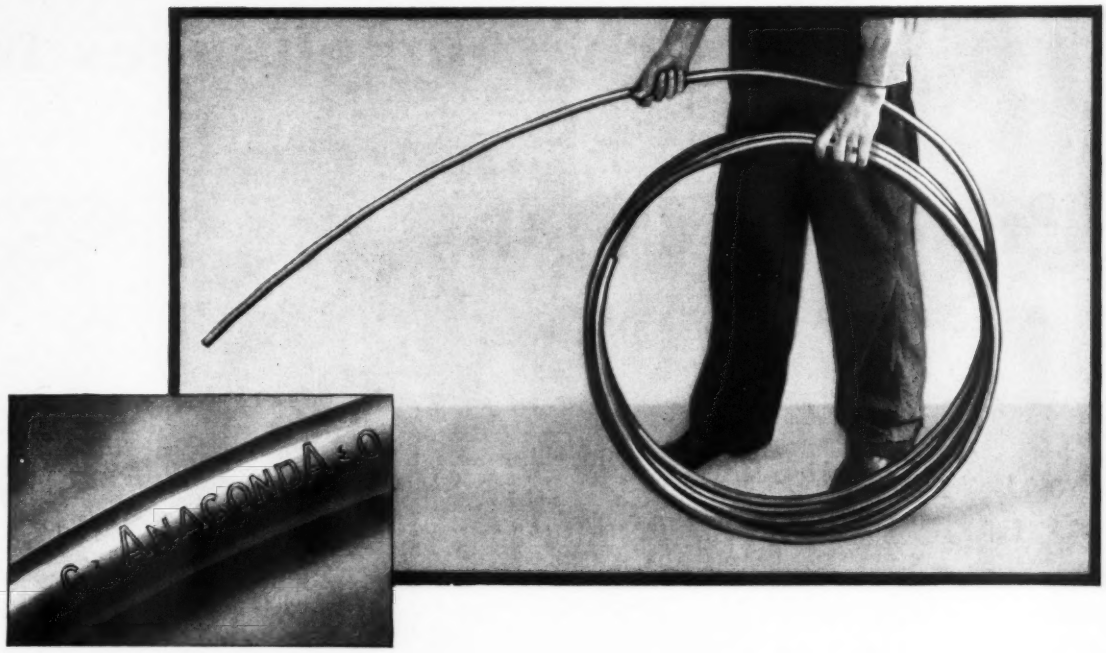
SEATTLE, WASH.: James A. Riordan Co. (Inc.), 5319 Admiral Way.
PHILADELPHIA, PA.: E. S. Thompson, 2401 Chestnut St.
CLEVELAND, OHIO: J. R. Stiles Co., 700 The Prospect-Fourth Bldg.
TRENTON, N. J.: Fred G. Hoffman, 831 Edgewood Ave.
MINNEAPOLIS, MINN.: Fred S. Wilsey, Plymouth Bldg.
PITTSBURGH, PA.: George W. Smith Co., 348 W. Penn Place.
CHICAGO, ILL.: Charles F. Stumpf, 417 West Ohio St.
ALBANY, N. Y. A. Mitchell Jr., 249 Central Ave.

SHERWOOD Ball Cocks



Anaconda Copper Tubes...

tested and listed by Underwriters' Laboratories

...for connecting oil burners

ANACONDA Deoxidized Copper Tubes in underground service sizes have been tested and listed under reexamination service by the Underwriters' Laboratories for connecting gas and oil appliances. This product now appears in the Underwriters' Laboratories' List of Inspected Gas, Oil and Miscellaneous Appliances.

In compliance with listing requirements, the approved tube is marked with the word ANACONDA and the letters G and O (gas and oil), as illustrated.

In Anaconda Copper Tubes, as in all other Anaconda Copper, Brass and Bronze products, every precaution is taken to assure uniform, dependable quality.

A RUST-PROOF TANK AND BRASS PIPE

A storage tank of Copper or Everdur, connected with Anaconda Brass Pipe, provides a completely rust-proofed hot water system. Public knowledge of such a system's many advantages will stimulate sales of rust-proof tanks and continue to increase the use of Brass Pipe.

ANACONDA
from mine to consumer

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Conn.
Offices and Agencies in Principal Cities
In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

ANACONDA COPPER & BRASS

What are your chances for Plumbing Profits in 1933?

ALL OF US would like to believe that things are going to pick up soon. But—let's face it—new building activity isn't likely to boom overnight. You know and we know that the best bets for business this coming year will continue to be: *modernization and replacements.* There lie your chances for plumbing profits in 1933, bigger and better chances than ever—if you'll only seize them aggressively.

Turn your shop window into a show window! Make modernization salesmen out of every one of your workmen! See that they sell replacements when they're called to make repairs! And here's one point that's mighty important if you want long-run profits. . . . When you sell customers modernization, when you sell them replacements, be sure to sell them *fittings that give satisfaction.*

That, gentlemen, is where Scovill comes in. We've been making brass goods for 130 years. Plumbing fittings for several decades. And we certainly know how to make them do the job! After severe tests, engineers specified Scovill fittings for the R. C. A. Building, other large office buildings, apartment houses, schools everywhere. And the service these installations are giving proves that the engineers specified right! Fittings so serviceable, fairly priced, will insure your customers' satisfaction—bring you repeat business—build your profits.

For modernization jobs that will *stay* modern, sell Scovill Shower Equipment and Scovill Flush Valves (the only kind that lubricate themselves). For replacements that will *stay* replaced, sell the rest of the Scovill line of plumbers' brass goods. And remember that Scovill's new Vogue design is ideally suited to all types of work, for it matches both old and new enamelware.

Will you get in touch with your jobber or Scovill for complete information and prices on the Scovill line? We are always glad to advise and help you in any way. Don't hesitate to write.

SCOVILL MANUFACTURING COMPANY
PLUMBERS' BRASS GOODS DIVISION
WATERVILLE • CONNECTICUT

Scovill Flush Valves—Shower, Bath and Lavatory Fittings —Tubular and Miscellaneous Plumbers' Brass Goods for General Plumbing Requirements.

Scovill

SCOVILL

WE STILL BELIEVE IN SANTA CLAUS

...but we do not believe in publishing an unprofitable resale price to the consumer!

ALTHOUGH this company is forty-five years old we still believe in Santa Claus and we are proud to admit it. We believe in him because of the great happiness he has always created.

With the same many years of business experience in the plumbing industry we do not believe in a sales policy of manufacturers of plumbing fixtures publishing an inadequate re-sale price to the consumer.

The reason we do not believe in this policy is because we do not feel it is going to make anyone happy.

IT'S CHRISTMAS » » » » » LET'S FORGET IT ALL AND BE HAPPY ANYWAY

♦

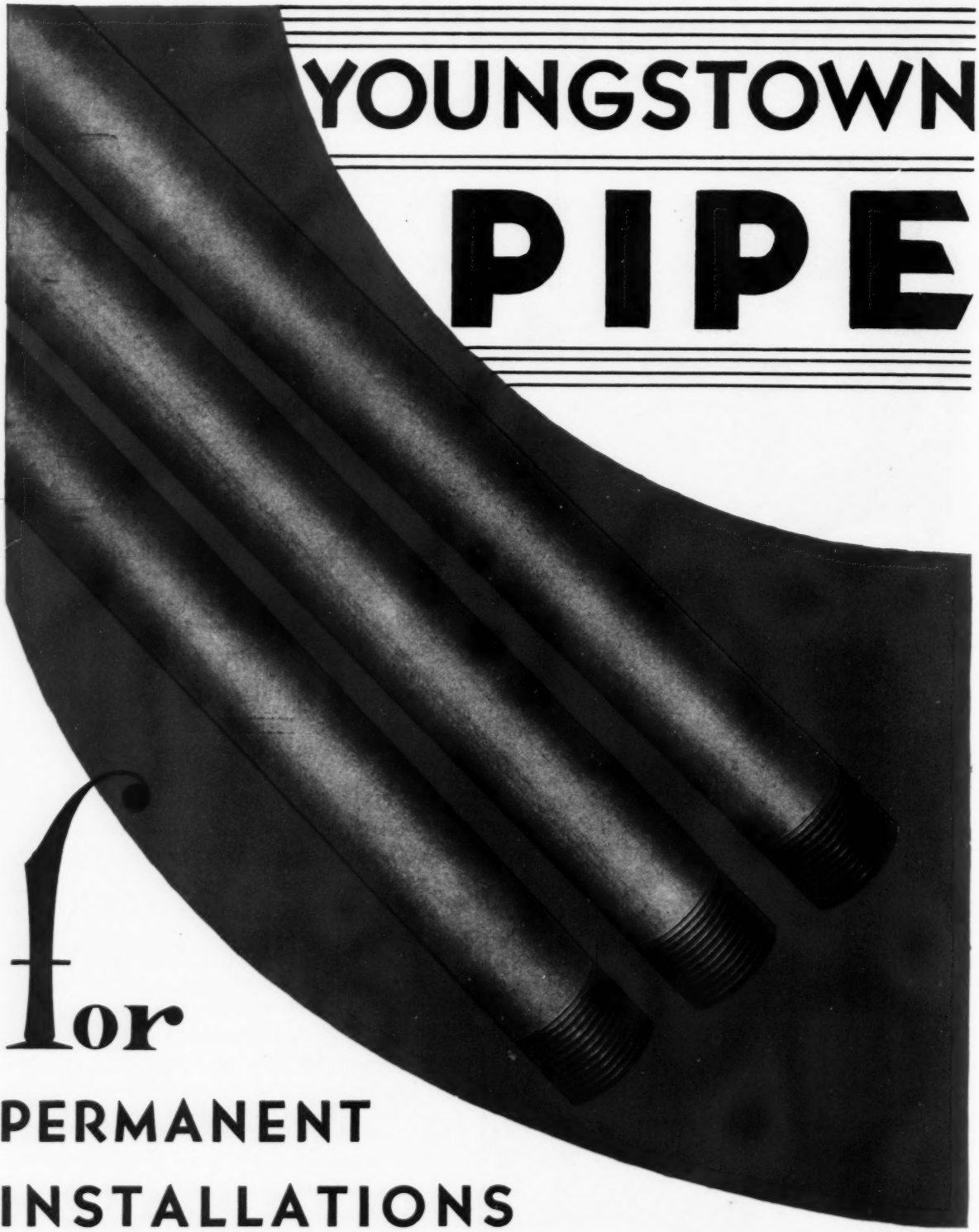
Douglas Water Closets Brought the Outside In

♦

Owing to the great volume of government work, and the fact that The John Douglas Company have long enjoyed a national reputation in this field, we maintain an office exclusively for this purpose at 821 Union Trust Building, Washington, D. C. Please be free to write for any service or information.

The
JOHN DOUGLAS COMPANY
CINCINNATI OHIO
Manufacturers of Plumbing Fixtures

YOUNGSTOWN PIPE



for

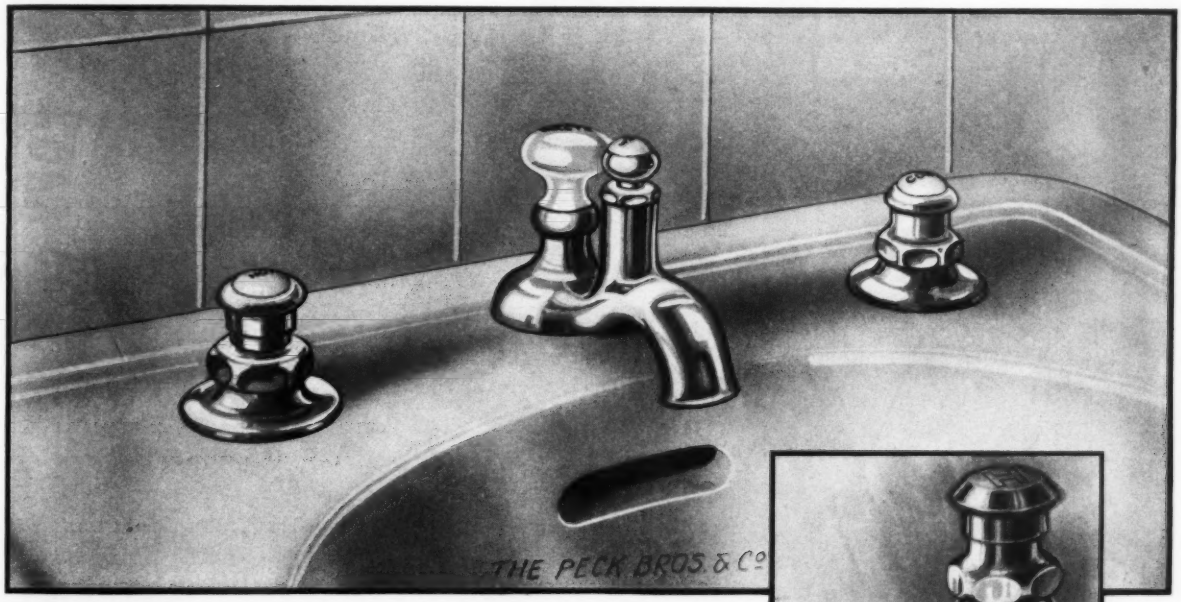
PERMANENT INSTALLATIONS

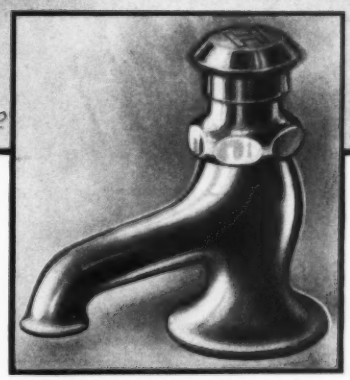
THE YOUNGSTOWN SHEET & TUBE CO.

GENERAL OFFICES YOUNGSTOWN, OHIO

SLOW SELF-CLOSING

PUSH BUTTON OPERATION





This fixture may be had in single as well as integral spout combination type

NO need to rinse one hand at a time while the other hand holds the valve open with this new Peck Bros. "Veronica" fixture. The slow self-closing feature permits the user to open the valve and thoroughly rinse both hands before the flow stops.

Push button operation eliminates the slipping of soapy hands so bothersome with ordinary faucets.

This fixture also delivers ice water through the same spout as the hot and cold water, but through a different channel. It is supplied with or without ice water attachment.

These features combine to make the new Peck Bros. "Veronica" fixture handy to use and easy to sell. Write for full particulars.

Peck's Better Brass Builds Better Business

THE PECK BROS. & COMPANY

127 CHESTNUT STREET NEW HAVEN, CONN.

Field Building, Chicago, Ill.

Pennsylvania Station, Philadelphia, Pa.

Harvard Memorial Chapel, Cambridge, Mass.

8701 Shore Road Apartment, Brooklyn, N. Y.

The sixty-eight pages of the new Aero Convector Catalog are crammed with facts that make it easy to figure concealed heating jobs. Complete description of the various units . . . piping connections . . . ratings of units when used with any type of enclosures . . . details of recess construction . . . everything is included, in convenient, simple form. The Aero Convector—made of cast iron, the lifetime metal—is winning new friends, day by day. The illustrations above show some recent jobs, which indicate the importance and variety of the installations which Aero is serving. Because of its durability and dependable performance on vapor, steam and hot water systems, you will like the Aero Convector. Send for your copy of the catalog today.

NATIONAL RADIATOR CORPORATION

JOHNSTOWN, PENNSYLVANIA

National Radiator Corporation,
Johnstown, Pa.
Send me a copy of the new Aero Convector Catalog.

Name .....

Street .....

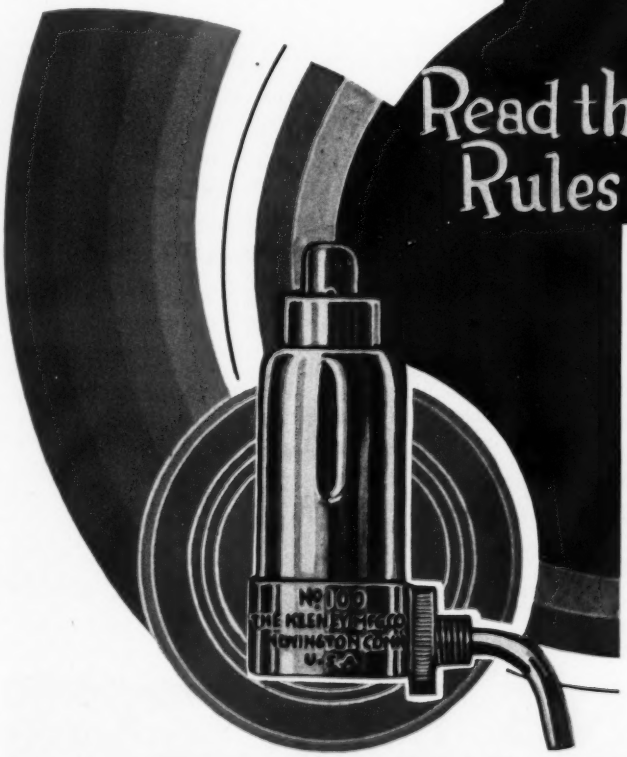
City ..... State .....

If you've ever sold an AIR VALVE

If you can write a letter, telling how the sale of air valves has led you to the sale of other plumbing and heating equipment or repair work, you have an excellent chance of participating in the numerous cash prizes we are offering. $100, first prize; $50, second prize; $25, third prize; $15, fourth prize; and ten additional prizes of $1.00 each are offered. Get busy today and write us that letter. It is as easy to get a prize as it is to sell air valves. Remember, we are interested in how the sale of air valves—any air valve—helped you sell other plumbing and heating equipment or repairs.

PART OF THIS $200.00 CAN BE YOURS

Read the Contest Rules Carefully



RULES OF CONTEST:

Only plumbing and heating contractors are eligible.

Write a letter, not more than 300 words, telling how the sale of air valves helped you sell other plumbing and heating equipment or how this sale secured a new contract.

Prizes to be awarded: First prize, $100.00; Second prize $50.00; Third prize $25.00; Fourth prize $15.00. Ten additional prizes of $1.00 each.

In case of a tie, duplicate awards will be made.

The decision of the judges will be final.

All letters must be in Newington, Conn., by Midnight, January 15, 1933.

These letters become the property of the Keeney Manufacturing Co.

Names of winners will be announced in the February issue of Domestic Engineering.

Reprints of this advertisement are available for all jobbers on request.

THE KEENEY MFG. COMPANY
NEWINGTON CONN.

KEENEY Air Valves

The Kind of Pipe That Set These Records Is the Kind of Pipe That Reading Makes Today

AMMONIA LINES
40 years, Harriman, Tenn.
32 years, New York City

BRINE LINES
25 years, Knoxville, Tenn.
20 years, Pottstown, Pa.

COLD WATER LINES
71 years, New York City
67 years, Washington, D. C.

HOT WATER LINES
74 years, Chicago, Ill.
46 years, New York City

GAS MAIN
45 years, New York City
30 years, Philadelphia, Pa.

O'L WELL CASING
12 years and still good, California
48 years. Olean, New York

OIL WELL TUBING
31 months in Texas, where other metal failed in 9 months
36 months and still good where other metal pipe failed in 6 months

STEAM SUPPLY LINES
63 years, Norfolk, Va.
49 years, Cincinnati, Ohio

STEAM RETURN LINES
45 years, Chicago, Ill.
63 years, Norfolk, Va.

VENT LINES
43 years, Kansas City, Mo.
42 years, Chicago, Ill.

DRAINS
36 years, Chicago, Ill.
25 years, Philadelphia, Pa.

OIL LINES
44 years, Bradford, Pa.
40 years in Pennsylvania and then relaid in Texas

ONLY from the past come accurate guides to pipe performance . . . service records that show what pipe materials have done in *use*.

Such records mean nothing unless you buy pipe of the *same metal* and made in the same way as the pipe that set the records.

Reading genuine Puddled Iron Pipe is the heir to the records of all genuine Puddled Iron Pipe because Reading today makes its pipe of the same materials and by the same methods as those used in producing the pipe that made iron famous.

Reading owns its own mine of high-grade iron ore. Reading makes its own pig iron. Reading never uses scrap metals. Reading puddle balls are made in puddle furnaces standing on the same ground as its furnaces in the past, built and operated in the same way. Reading puddlers are trained in the Reading mills. Reading, throughout its manufacturing processes, follows the old methods that made pipe that lasts but today Reading adds a greater scientific precision of control and far more rigid inspection that insures that Reading Puddled Iron Pipe is better than it ever was before.

You can buy Reading Puddled Iron Pipe today with the absolute assurance that you are getting the same quality of pipe in metal and workmanship as the best in the past. You can look forward to the same long life and freedom from repairs in pipe lines that Puddled Iron Pipe service records foretell. If you need really GOOD pipe today, consult us.

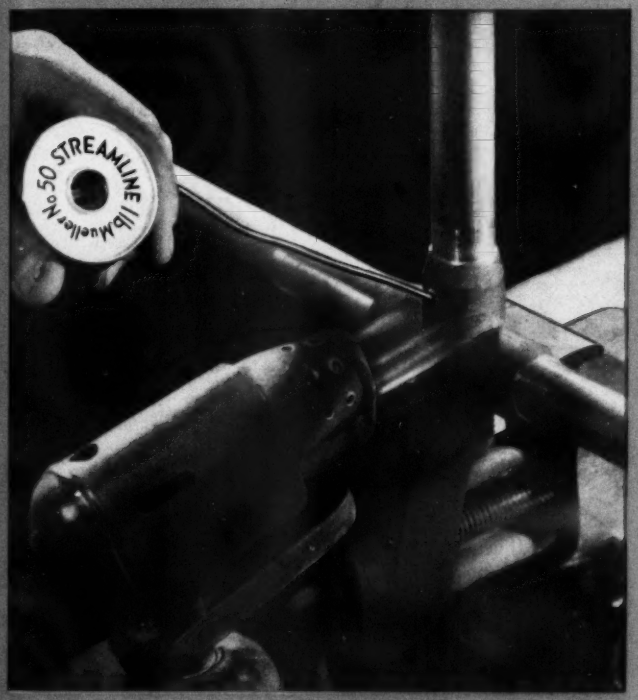
READING IRON COMPANY, PHILADELPHIA

READING PIPE
PUDDLED IRON
Since 1848

Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Iron

STREAMLINE

cut ... ream ... clean ... flux ... torch!



Feed the solder through the feed hole only. In no other way can you be absolutely sure by visual inspection that a perfect leak-proof bond has been accomplished. This is a feature which no other connection possesses.

A HACK saw, a file, a piece of sandcloth, a blow-torch, a can of STREAMLINE soldering flux and a spool of STREAMLINE solder wire are all that are required for an installation of STREAMLINE hard copper pipe and fittings—five simple operations. Gone are the back-breaking days of threading pipe. Science now takes the place of sweat. Mueller makes it possible for the journeyman to be again the craftsman of the soldered joint. A journeyman's skill, a few drops of solder and a law of nature now combine to make the tightest joint known to the trade.

The connection between Mueller STREAMLINE hard copper pipe and Mueller STREAMLINE fittings is positively leakproof. Expansion will not work it loose nor will vibration affect it. This Mueller patented joint is stronger than the pipe itself.

STREAMLINE—time-tested and proven—has three years of public acceptance—and the confidence of the trade. Thousands of installations throughout the country are a testimony of its outstanding merit.

ASSURANCE OF A LEAK-PROOF CONNECTION BY VISUAL INSPECTION IS AN EXCLUSIVE FEATURE OF THE MUELLER PATENTED JOINT

The Mueller STREAMLINE Fitting *alone* has the valuable visual inspection feature by which the plumber can tell at a glance, without an actual pressure test, that he has made a perfectly bonded leak-proof connection. The method of feeding the solder *into* the fitting is exclusive with the STREAMLINE Fitting. This method insures a thorough distribution of the solder. There is no guess work about it—when the fitting and pipe have been cleaned and fluxed, and the solder fed into the fitting through the feed hole, nature's law, capillarity, inevitably works, sure and certain as the law of gravitation itself, and causes the solder to flow evenly in all directions. Consequently, its appearance as a white ring at the end of the fitting is your visual evidence of a leak-proof joint.

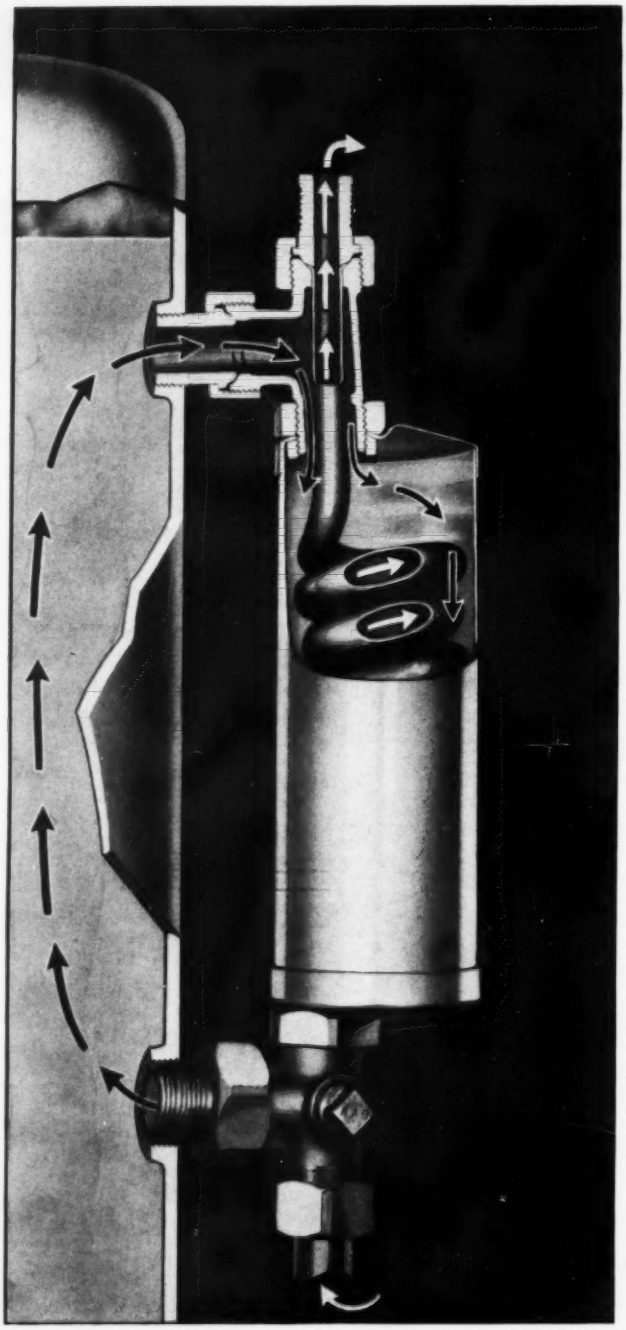
Valves incorporating this patented feature are procurable from the following manufacturers who are licensed under Mueller Brass Co., STREAMLINE Division, patents 1,770,852 and 1,776,502, to use this patented joint as part of their product for use in plumbing, heating, gas, refrigeration and other equipment:

The Empire Brass Mfg. Co., Cleveland, Ohio
Hasco Valve & Machine Co., Milwaukee, Wis.
Wm. Powell Co., Cincinnati, Ohio
The Republic Brass Co., Cleveland, Ohio
Scott Valve Mfg. Co., Detroit, Michigan

STREAMLINE Fittings are manufactured in Canada by the Canada Wire and Cable Co., Ltd., Leaside, Ontario.

Mueller Brass Co.

PORT HURON, MICHIGAN



FOR NEW PROFITS

ERSKINE ALL-COPPER INDIRECT WATER HEATER

ALL COPPER

The Erskine Indirect Water Heater is All Copper, copper shell as well as coil. This insures cleaner water, freedom from rust and sediment in the shell, elimination of shutdowns for cleaning the shell around the coil.

FLEXIBLE

The union connecting the Erskine All Copper Indirect Water Heater with boiler and water system may be turned in any lateral position, requiring fewer connections and making installation easier.

EASY TO INSULATE

In order to insulate this water heater, it is necessary only to cut a piece of pipe covering, of the correct diameter, to fit, and to fasten it in place with a couple of bands, no wire, no cement, no mess.

MAY BE INSTALLED PARALLEL

For large size installations Erskine All Copper Indirect Water Heaters may be installed two or more parallel any or all of which may be operated as required.

WORK ALL YEAR ROUND WITH OIL BURNER

On an oil burner job, this water heater may be made to work during the summer months. Just shut off the house heating system. The burner, controlled by an aquastat, then comes into action only often enough to keep water at required temperature.

FOR FULL INFORMATION

Write for attractive illustrated booklet giving full particulars of this easily sold, profit making item.

Size	*00	0	1	2	3	4	5
List Price	$12.00	$18.00	$26.00	$34.00	$50.00	$75.00	$120.00
Capacity Below Water Line, Gallons	30	40–60	80–100	100–160	160–220	300–350	350–400
Capacity Live Steam, Gallons	48	96	160	246	356	560	640
Diameter, Inches, "D"	3½	3½	4	4	5	5	5½
Length, Inches, "L"	12	18½	20	23½	28¾	33¼	37¾
Center to Center of Boiler Connection "C"	10	13	15	18	22	26	31¼
Boiler Connection, Inches	¾	1	1¼	1¼	1½	2	2
Tank Connection, Inches	¾	¾	¾	1	1	1¼	1½
Shipping Weight, Lbs. (approximate)		7	9	13	16	20	25

*00 Straight Fittings only.

ERSKINE COPPER RADIATOR CORPORATION

1 EAST 42nd STREET — Branches in Chicago, Boston, Philadelphia, Washington — NEW YORK, N. Y.

Representatives in all large cities

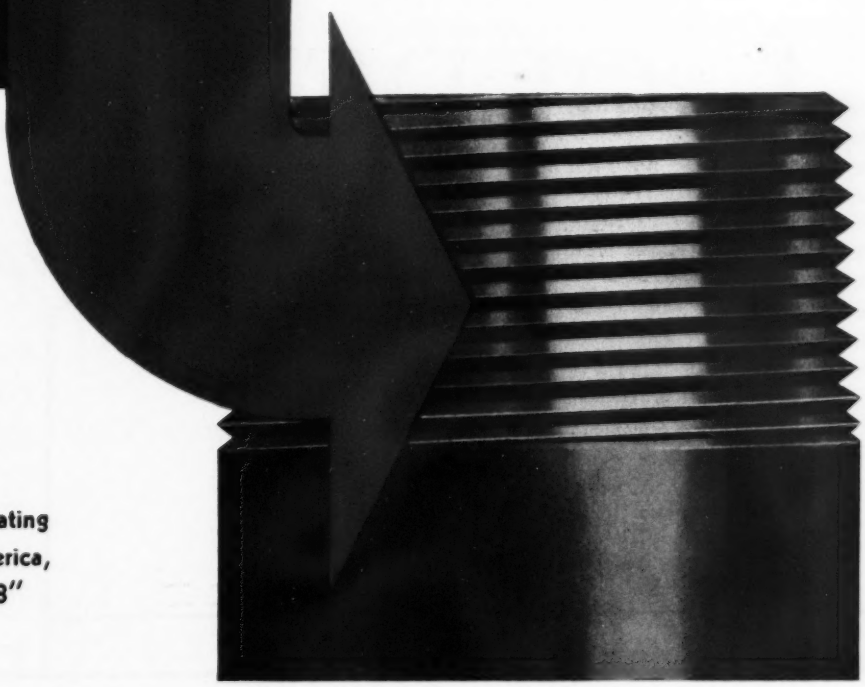
TAPER
• • •
ACCURACY
• • •
DEPTH OF
THREADS
• • •
ARE
CAREFULLY
CHECKED

EVERY length of "SPANG" Steel Pipe is produced with the utmost care . . . all threads are carefully checked and inspected for absolute trueness to gauge . . . they are always clean-cut, insuring good, tight, permanent joints.

Reliable jobbers in every important industrial center carry ample stocks of "SPANG" precision made tubular products . . . either black or galvanized.

SPANG, CHALFANT & CO., INC.
General Offices: CLARK BUILDING, PITTSBURGH, PA.
SALES OFFICES: New York Boston Pittsburgh Chicago St. Louis Tulsa Los Angeles Dallas San Francisco
WELDED MILLS: Etna, Penna., Sharpsburg, Penna.
SEAMLESS MILLS: Ambridge, Penna.

"SPANG"
WELDED STEEL PIPE



"The oldest operating pipe mill in America, established 1828"

They...

. . . ask so little—and need so much

Just to be
Your Unseen Guests
during

GOLDEN RULE

DECEMBER 11TH TO 18TH, 1932

THE plan for Golden Rule Week this year enables even those with limited incomes to welcome these unseen guests who ask so piteously for a place at your table. At the least possible sacrifice you now can do your part to help them weather what many believe will be the crucial year of the depression.

A committee of leading household economists has prepared a series of menus and recipes to be used each day during Golden Rule Week. Tempting and appetizing, they will provide a family of five with adequate sustenance for an entire week at a maximum cost of $8.88. The saving from your usual table budget will make it easy to follow the dictates of your heart toward alleviating the suffering of the less fortunate.

A 48-page illustrated booklet containing the 21 menus, with tested recipes and valuable supplementary information will be sent free of charge. Just sign and mail the coupon—TODAY.

week GOLDEN RULE ECONOMY MENUS

make giving a delight
Send for them!

Golden Rule Foundation,
60 E. 42nd St., New York, N. Y.

Please send me illustrated booklet containing 21 Golden Rule Economy Menus, with tested recipes. I understand that there is to be no charge for this.

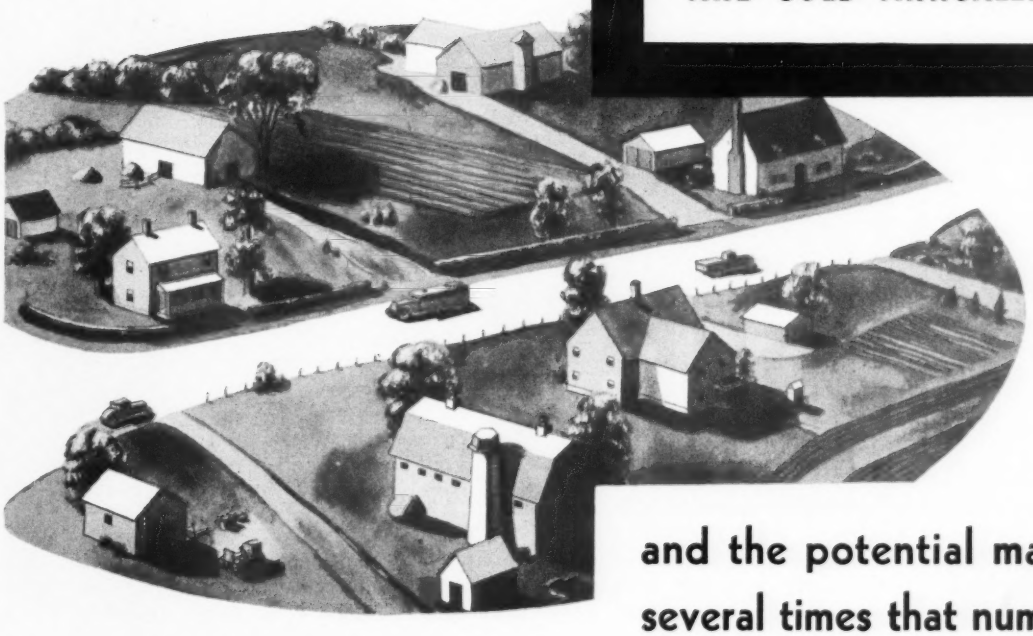
Name .....

Address .....

City ..... *State* .....

24

120,000
WATER SUPPLY SYSTEMS ARE SOLD ANNUALLY ...



and the potential market is several times that number...

The installation of water supply systems entails the use of steel pipe for the suction line from the well or source of water and for the supply line to the house, barn, country club or other structure being served. Depending upon the location of the pump, from twenty-five to several hundred feet of steel pipe ("Central" preferred of course) is used in such service lines.

The sale of a water system usually entails a complete plumbing system in the home, such as showers, lavatories, etc., with the result that such an installation means not only increased pipe sales for you but new fixtures which the system makes possible.

There are, undoubtedly, numerous prospects in your territory for water supply systems. Why not make a little survey of your own and look into these possibilities? The "Central" Jobber will be glad to cooperate with you in every way possible.

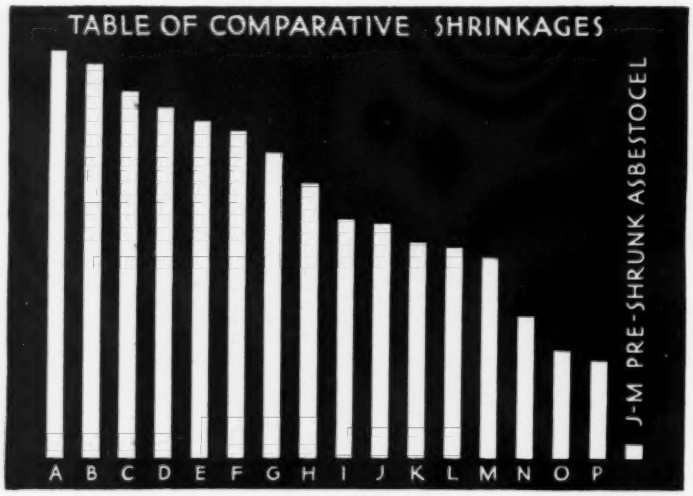
CENTRAL

STEEL PIPE

"TESTED STRENGTH IN EVERY LENGTH"

CENTRAL TUBE CO.
PITTSBURGH

New Pipe Covering *ends* ALL *objectionable shrinkage*



. . . these Testing Laboratory figures *prove it*

Engineers compared 16 leading brands of cellular pipe coverings with J-M Pre-Shrunk Asbestocel—under conditions comparable to actual service in the field. Tests proved that shrinkage varied from 8 to 33 times greater than Pre-Shrunk Asbestocel—showed an average *shrinkage for the 16 brands* 21.3 times greater.

JOHNS-MANVILLE Pre-Shrunk Asbestocel *eliminates shrinkage troubles*—the one big shortcoming that all cellular pipe coverings have always had . . . yet costs no more than the famous J-M Improved Asbestocel.

Shrinkage gaps are not caused by careless application. They are due to the fact that the asbestos paper in all *old-type* cellular coverings will absorb moisture. This moisture, absorbed while in stock or during application, causes the covering to expand. When the heat is turned on, the covering dries out—shrinks—sections pull apart at the joints. *J-M Pre-Shrunk ends this trouble.*

Why? Simply because J-M Pre-Shrunk is made of waterproofed *paper*. It cannot absorb moisture. The cause of shrinkage is thus eliminated—shrinkage troubles disappear. Every job of J-M Pre-Shrunk stays 100% in appearance. Unsightly shrinkage gaps that spoil the appearance of the job are a thing of the past—so are profitless repair calls and complaints about faulty workmanship.

Available in canvas and non-canvas finish—New Non-Canvas type saves* 1/3 *labor cost

By eliminating objectionable shrinkage, Pre-Shrunk has made the time-saving Non-canvas finish practical, for the first time!

This type of finish requires no pasting. Slips easily over the pipe like an open book, then clinches on tight with simple, quick-fastening staples. In test after test, even when applied by operators unfamiliar with it, it has cut application time more than one third. You can add this labor saving to your profits. And the job stays perfect in appearance without the flaws that shrinkage otherwise would cause.

* * *

J-M Pre-Shrunk Asbestocel is now stocked by all better plumbing supply houses. Available in 3 types shown below. Prove the advantages of Pre-Shrunk Asbestocel on your next job. For full particulars, see your supply house or write to Johns-Manville, 292 Madison Avenue, N. Y. C.

Regular Canvas-Covered. *The standard finish for many years provides all advantages of old-style J-M Improved Asbestocel, plus the new Pre-Shrunk feature—yet costs no more.*

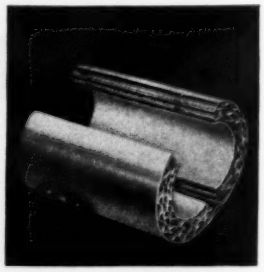
Johns-Manville

JM

Pre-Shrunk

ASBESTOCEL

Asbestos-Covered High-Speed. *With attractive Asbestos Paper Finish. Needs no pasting—saves one-third application time. Costs no more than regular Canvas-Covered Pre-Shrunk Asbestocel.*



Aluminum Finish High-Speed. *A de luxe covering suited to your most particular jobs. Its handsome aluminum finish does not fade. Only slightly higher in cost.*

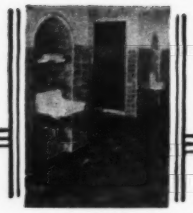
—this joint tins itself!

SOLDER flows uphill...downhill...sideways...when you make a Chase Sweat Fitting joint. You clean the metal to be sweated. Apply flux. Heat. Touch Chase Wire Solder to the joint and—*presto*—it's perfectly tinned all the way 'round and up.

Capillary attraction—an old law of nature—sucks the solder in to make a 5,000-lb.* pressure-tight joint. Using Chase *Rigid* Copper Water Tube, the finished line is professional-looking, straight-hanging, and costs the customer little more than a rustable job. Chase Brass & Copper Co., Incorporated, Waterbury, Conn.

CHASE SWEAT FITTINGS

**Tests made on half-inch Chase Tube and Chase Sweat Fittings*



BETWEEN OURSELVES

Our Front Cover

OUR cover subject this month shows a "modernesque" bath. The description we have tells that it is finished in "violet brocatele." And it is worth while recalling that just as a master plumber sold and installed the equipment which is now regarded as old-fashioned so the plumbing dealer of today is the dominant influence in the sale and installation of the more modern equipment.

A House of Steel

THEN in keeping with the spirit of the cover, you'll find an interesting, illustrated report about a new, frameless steel house. Behind the scenes, all of us have heard a lot lately about new ideas in house construction. The steel companies are known to be anxious to find the way to make steel of common use in the home building field. Large companies, some within the building industry as it now stands, and some from outside the field, are known to be at work on plans which would radically modify residence construction as we have always known it.

Mass Production

THEN the so-called "large-scale" operations fit into the picture as it has been drawn for our interested eyes to see. Quantity production methods which have altered practices in other industries so completely were being gone over intently to see if they could not work a similar transformation in the home building field.

A New Idea

THE illustrated article on page 37 shows how steel sheets have been adapted for exterior and interior house construction. In this test house, the design of the plumbing and heating equipment has not been greatly modified by the unusual constructional plans. But to the alert contractor, we know these close-up views of a new building idea will be interesting.

Remodelling Work Gains

YOU will recall a chart published on Page 121 of our November issue which showed that remodeling work while only 17 per cent as important as new work four years ago, was now 120 per cent as important. New residential work had taken a nose dive but modernization work in the 12 months ended in August of this year was as large, dollar for dollar, as in the 12-month period ended in August, 1928. An address reprinted on Page 53 of this issue tells the story in another way. Residence work has fallen by 81 per cent, but sales of radiation have dropped only 70 per cent, the difference being made up by increased sales for remodeling.

A Profitable System

ALONG the line of handling remodeling orders, we are glad to call your attention to an article which tells of the systematized way in which Thomas E. Clark of Washington, D. C., runs his business. He has developed an orderly plan of recording each job he fills so that he can both estimate quickly and closely on new inquiries and check safely and profitably on a job after it is finished. His record shows the system has meant more profits to him.

Advances in Plumbing

JERE L. MURPHY of New York City has done a lot for the advancement of the science of sanitation. Many of our readers, like the writer, have had the privilege of hearing and reading Mr. Murphy's informed comments on the contribution of the master plumber to the improvement of sanitary systems and through that progress to the advancement of civilization itself. Our big cities, a development in world progress unknown before these improvements in sanitary systems made them possible, are a testimonial to what good plumbing means. It is a real pleasure to offer you some lively discussion by Mr. Murphy of various phases of modern plumbing in response to some stimulating questions and comments by William W. Hughes, another student of and contributor to our present standards.

Of Help to Readers

THIS is only a slight hint of the many special offerings assembled in this issue for the assistance of our readers. We believe you will like it.

Your Editor

★ new, smart ★

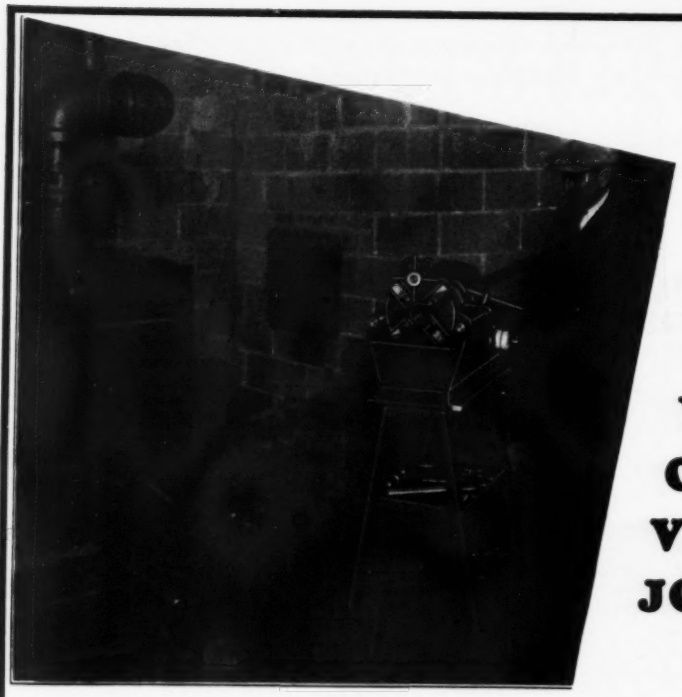
"Standard" PLUMBING FIXTURES

CREATING new sales wherever shown, these two different, modern "Standard" fixtures fit profitably into today's modernization selling picture.

Compact, yet with ample 15x12 inch bowl, the new Companion Lavatory, in vitreous china, matches perfectly the lines of the One-Piece Closet. Together, they meet exactly your customers' needs in renovating an old bathroom, creating a new one in small space, or putting in a downstairs lavatory as a "tidy-up" room.

Attractively compact, smart, graceful in design, modest in price, these two new "Standard" fixtures will bring you your share of today's business. See them in "Standard" showrooms.

Standard Sanitary Mfg. Co.
PITTSBURGH, PA.
Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION



THERE'S A WAY TO INCREASE YOUR PROFITS ON EVEN THE VERY SMALLEST JOBS . . . . . .

Put a "TOLEDO" No. 999 ½-inch to 2-inch fast, efficient, power pipe machine on your payroll. Use it in your shop or take it to the job—anywhere you have pipe to cut and thread, and you will reduce your job costs and increase your profits far beyond belief.

No more slow hand-threading. Just a turn of the switch and the thread is cut easily and quickly. 14 seconds to cut off 2-inch pipe and 30 seconds to thread it—less than 3 minutes to make up a "TOLEDO" 2-inch life-time connection that will withstand knocks, blows, and the most severe service. There is nothing like "TOLEDO" rigid pipe connections to give satisfaction, and hours and days can be saved on piping jobs, permitting lower bids, more work, and—PROFITS.

If you are interested in ways to increase your profits—

I am interested in reducing job costs and increasing profits. Show me how.

Name.....

Street.....

City.....

State.....

Mail Coupon to

THE TOLEDO PIPE THREADING MACHINE CO.

Toledo, Ohio

New York Office: 72 Lafayette Street

OUR INDUSTRY

Paying the Customer

JUST why a business man should pay a customer for the privilege of working for him, is a never ending mystery. It is regularly answered but the answer is not the solution apparently as the odd practice keeps on flourishing.

Whether the business man is a manufacturer of plumbing and heating goods, a wholesaler or a dealer, doesn't make a lot of difference. In each rank can be found some who are willing to pay for the assurance of losing their own money.

The answer comes quickly. It is always the other fellow. This other man kept on lowering his bid, the speaker needed a job, so apparently anxious to prove that he could afford to lose more than his competitor, the first man takes the order at a below-cost price.

One of our manufacturers did that in a case we heard of recently. His price was far below a well equipped competitor's production cost. The answer was simply that they needed some business but no one can explain the advantage of contracting for a definite loss instead of risking a possible one.

As one writer on economics puts it, "for the first time in many years, American industry is putting the emphasis on price as against quality and service." Meeting a cut price puts your products and service on a parity with those of the price-cutter. And yet successful plumbing and heating dealers and manufacturers have made their success on a record of quality and service.

With business again entering on happier days, every one can help it forward by restoring the word 'profit' to its rightful place in every business transaction.

It's No Time for Excuses —

NEWS came to us the other day about a recent investigation of its sales problems made by an automobile manufacturer. The figures that came out of the investigation were that a car can be sold today to one of 67 qualified prospects. A few years ago, the salesman could land one order out of every 21 qualified prospects.

It is not important whether these ratios are exact or not. The trend is logical as it confirms what we all know but sometimes forget—old fashioned hard work will cure any business slump. The figures merely give one the comfort of feeling that it requires about three times as much work now as a couple of years back.

This report says that "the fundamental principles of selling haven't changed. The old methods still work. It's a lot harder to sell now, but goods can be moved if the salesmen will shake off their lethargy. The trouble is that too many people are licked before they start."

None of us likes to admit that. We can see it fits the other fellow but not ourselves. But it is worth while checking up to see how much time we spend proving that a certain sales effort is not worth making because people are not buying, when profits can come only to those who use their time to make more effort—not less. The automobile company's investigation shows we need one-third as many excuses and three times as much effort.

Homes Needed for 12,000,000

WITH most of us accustomed to the best in plumbing, it is hard to believe that "12,000,000 American citizens find it impossible to obtain dwellings meeting minimum standards of sanitation and privacy." Yet that statement is made in the sixth volume of the final reports of the President's Conference on Home Building and Home Ownership. The citizens are negroes.

The report continues that "a study of negro housing in Richmond, Va., showed that at least half of the dwellings are in various stages of dilapidation; that less than one of every eight houses has plumbing facilities inside the house; that but one in three has a water connection inside the house; and that 14 per cent have neither kitchen nor bathroom."

The principal cause for this serious condition is that there is "never enough housing of acceptable quality for America's low-income groups." The recommendation is that a minimum standard of housing be set below which no dwelling shall be permitted to fall and then tackle the job of providing enough low-priced dwellings meeting that standard for all wage earners.

While these startling figures relate to negroes and reflect the crowding of such citizens into limited and restricted areas, they arouse a feeling that a big job is ahead of the building industry in bringing up the standard of American homes to that level of which we all were proud. But that standard even if above the world's average was not met in millions of homes.

Good plumbing and good heating are the badges of merit of the American home. Reconditioning, remodelling, slum clearance, reduction in costs of construction and of financing—all of these are offered as avenues through which the millions of Americans earning low incomes can gain the right to live in homes which merit the badge of the "American standard."

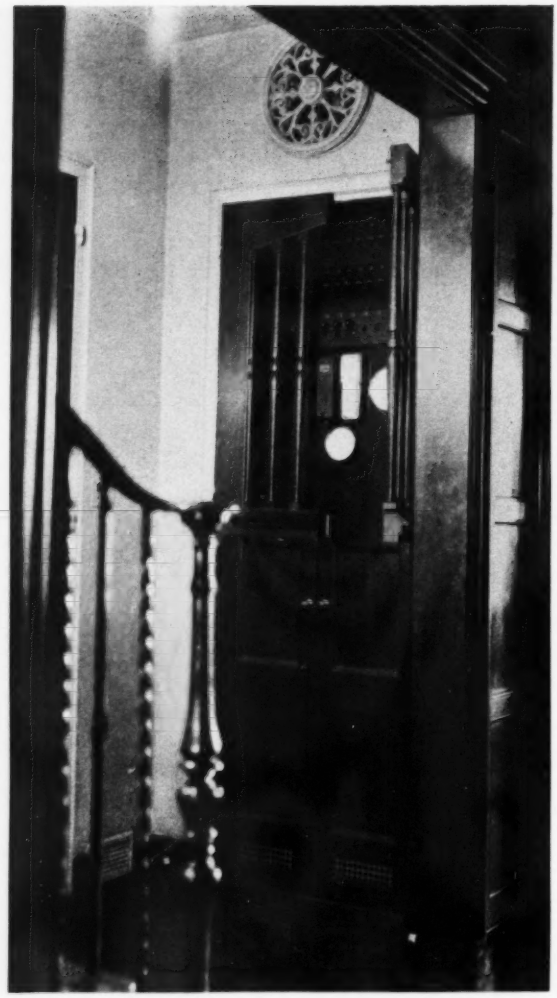


Fig. 1—This is the instrument control and switchboard for the air conditioning equipment, the installation of which caused special problems in the plumbing design

Here is an outstanding example of an elaborate plumbing system which was made such because of the unusual demands of the owner, the construction of the building and the local conditions

Plumbing Job Is Influenced by Air Conditioning

By L. CUTLER

FOR a residential plumbing job, the one which is described here contains an unusual number of interesting and outstanding features. It is located in a north suburb of Chicago. While it is within the corporate limits of the village, the section in question was laid out for small estates. No sewerage or water supply facilities have been extended to the site of this plumbing job, as yet.

Accordingly, the first problem was to provide for private water supply and sewage disposal systems. In doing this, it was desired to plan it so that all of the facilities could be connected to the municipal systems if and when they are available. As will be seen by the exterior view of the building, the basement is low. The basement plumbing facilities consist of a laundry tray and a water closet and lavatory. Naturally, it is not known what the height of the municipal sewer will be. This, together with the possibility of water backing into the basement in case combined storm and sanitary systems are installed, made it desirable to connect the basement facilities so that they may be discharged into the future municipal sewer separately, above the highest possible backwater line. In addition to this, the owner wanted air conditioning. The floors are of reinforced concrete with the result that they are one continuous slab and the space between the first floor slab and the false ceiling in the basement in effect serves as a plenum chamber. Heated and conditioned air is forced into this space and it is emitted into the first floor through grilles located in the various rooms. Ducts also are run in this space to carry heated and conditioned air direct to the upstairs rooms. It was recognized that if any cold water lines were run in this space there would be the possibility of sweating with consequent damage

to the basement ceiling. Furthermore, the owner desired finished ceilings in his basement without any pipe obstructions. All of these provisions were given adequate and satisfactory handling in the plumbing design.

Some idea as to the completeness of the air conditioning installation may be gained from the photograph marked Fig. 1. The view shows the instrument and switch panel located on the first floor stair landing, just off of the front entrance hall of the building. On the panel, the oblong instrument at the left is a device for controlling the relative humidity in the building. The instrument to the right of this is an electric clock and temperature control. The circular instrument which is only half shown is a barometer. This is for indicating the atmospheric pressure and corresponding changes in weather. The lower circular device is for indicating the amount of relative humidity existing in the building. The reading is direct by means of a pointer. This serves as a check on the operation of the humidifying equipment. Pilot lights are contained in the small knobs in the first line above the instruments. When on, these indicate the operation of the equipment controlled by the electric switch immediately below the pilot light. Notice that the pilot light at the left is shown burning. The grilles in the bottom doors and the open spindlework in the upper doors, permit the complete circulation of conditioned air over the control instruments to insure representative readings and operations. The circular ornamental grille at the top of the view shows an interesting decorative treatment. The small object in the baseboard at the left, which has the appearance of a grille, is in effect an electric light fixture for casting light only on the stair landing when other lights in the hall would be undesirable or unnecessary.

Fig. 3—This exterior view shows the character of the ground levels. The auxiliary sewage disposal laterals were located in the area just to the right of the building

The drawing marked Fig. 10 shows how the air conditioning installation influenced the piping installation

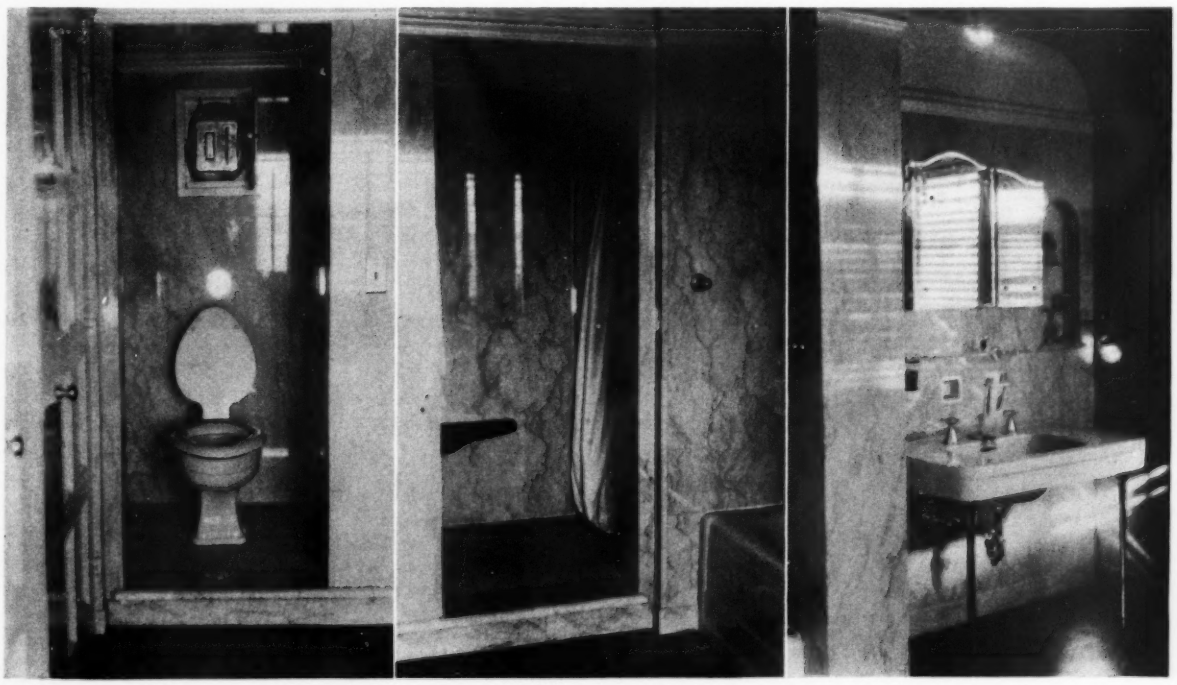


Fig. 2—Three views taken within the master's bathroom are shown below. The piping for this was run underground from the water supply header to the partition which was in the most convenient position to carry the riser

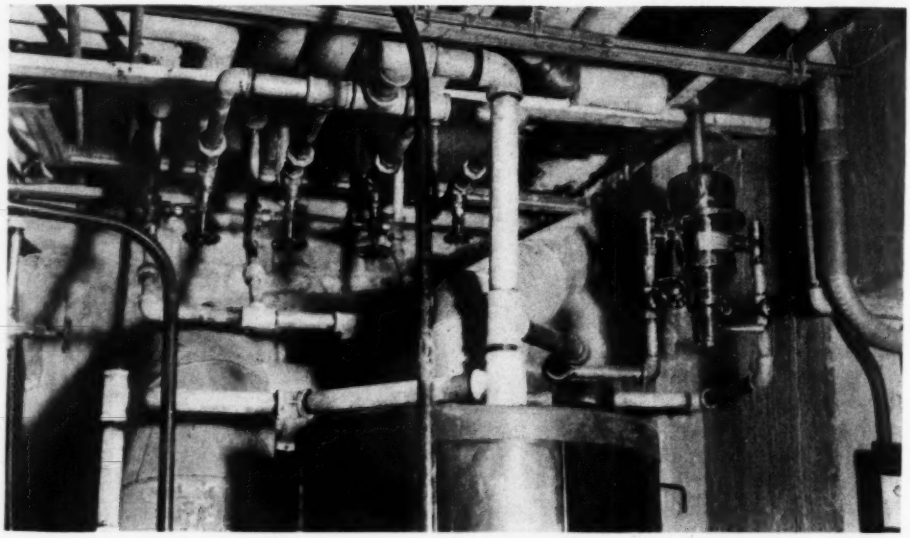


Fig. 4—This view shows the equipment in the basement for heating and distributing domestic water. Notice the header connected to the hot water outlet of the heater. The thermostatic mixing valve is shown at the right

for the domestic water supply. At the lower right hand side of the plan, connected to the house as an addition, will be seen the pump room. Photographs of this are shown in Figs. 6 and 7. There is no evidence of this room outside of the building insomuch as the roof is below grade and covered with sod. The drop in the ceiling elevation is well illustrated in Figs. 4 and 6. This room contains a deep well pump, the head of the pneumatic pressure tank, a settling basin, a sump, double connected sump pumps and a domestic water supply header. All of this is shown in Fig. 6 and 7 and is indicated on the plan in Fig. 10. Above the deep well pump, there is a man-hole which is covered over with dirt and sod. In the event it is necessary to remove the well rod, this is made possible by digging up the man-hole cover. It will be noted that the deep well pump supplies water to the pneumatic tank which is buried under ground and, in turn, to the domestic water supply header shown at the lower right of Fig. 7. An interesting experience was encountered in connection with the operation of the pump. It will be noted from Fig. 6 that out of the top of the pump air chamber there is a small line of tubing. As shown in the photograph, it runs to the electric pressure switch which controls the operation of the pump. When installed, this worked satisfactorily, but after a short time it was found that the pressure in the tank would be up to normal but that the pump would start to operate and in a moment stop, repeating this continuously.

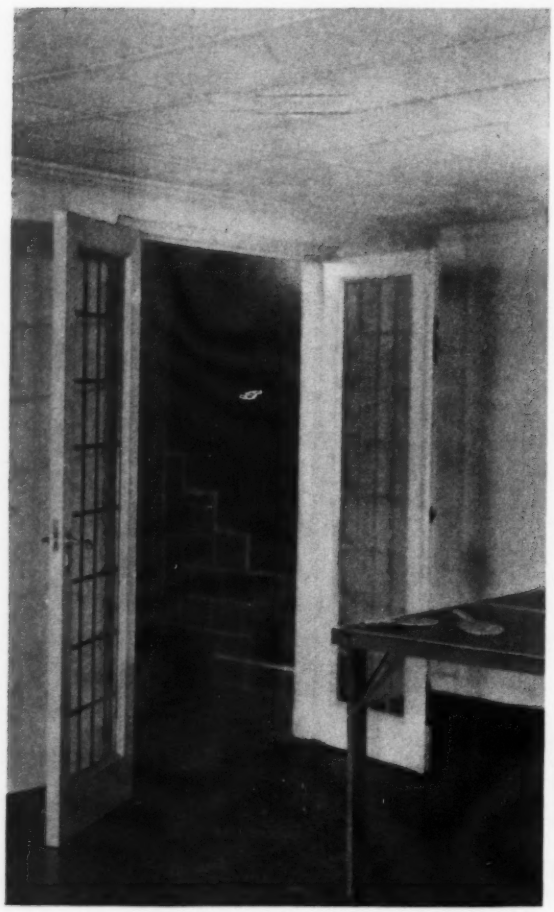


Fig. 5—This is a view of the basement and treatment of the ceiling. It is obvious that overhead pipes or the sweating of pipes located above the finished ceiling would ruin the final appearance

HOW TROUBLE WAS TRACED

It was noticed that there was a leak in the packing of the pump rod. Also, it was observed that the air chamber was located between the pump and the check valve. The analysis of the difficulty showed that the check valve held the pressure in the pneumatic tank but the packing released the pressure in the air chamber, with the result that the air chamber caused the intermittent operation. This was corrected by disconnecting the pressure switch tubing from the air chamber. Then it was connected to a line which was run over to the right and down from the pressure gage line of the pneumatic tank. This necessitated merely the removing of the pressure gage. A tee was substituted for the ell and the

line was re-assembled with the gage in place. With this arrangement, except in cases of normal draw-off, it would be necessary for the pressure in the entire pneumatic tank to leak out past the check valve and through the packing before the pressure switch could be affected. Referring again to Fig. 7, it will be noted that

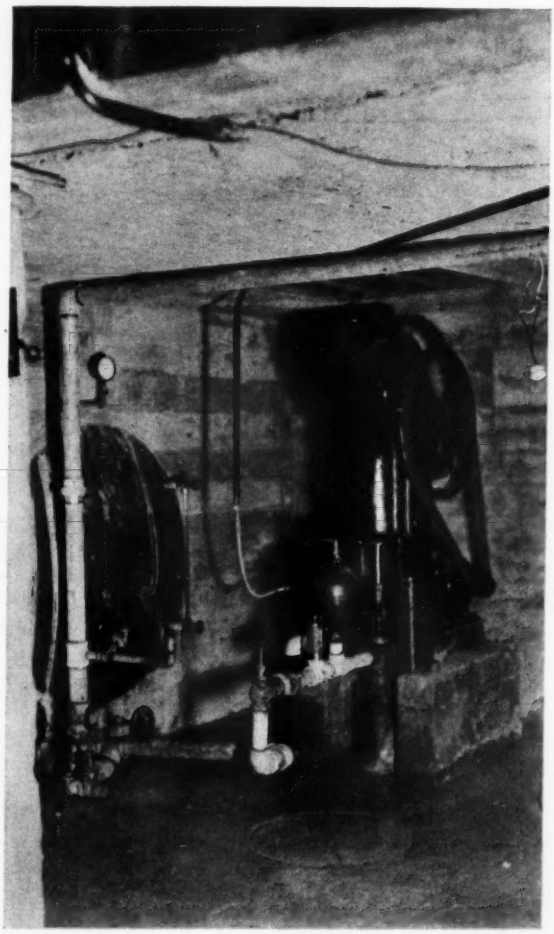
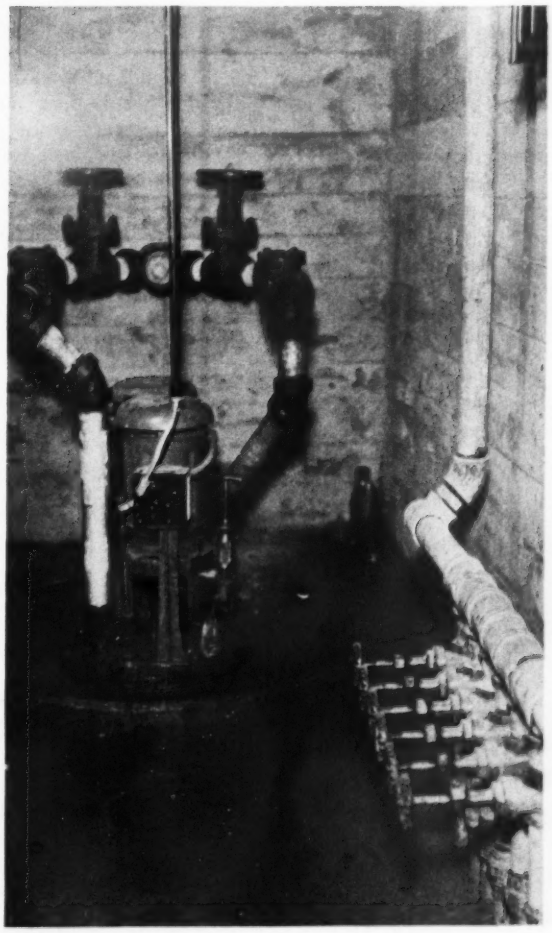


Fig. 6—Here is a view of half of the pump room. The pneumatic tank is buried under the ground and only the head is exposed in the wall at the left. Figs. 4, 6 and 7 are arranged so as to form a continuous picture

the header contains six valves for central and individual control of lines. These valves control the lines which go down under the floor to connect with their respective risers. All of these under ground lines are enclosed in pipes as a protection. The continuation of the header, as indicated in Fig. 10, serves as a connection for a fire hose.

In Fig. 7, looking at the valves from top to bottom, the first one supplies the hot water heater. This is an oil-fired piece of equipment, the top of which is seen in Fig. 4. It is interesting to note that this water heater in turn has its header for making individual distribution to the various faucets. The idea in back of this is that the owner did not want the pressure at one faucet to be influenced in any way by water being drawn at some other faucet. For instance, with a single circuit distribution system, if cold and hot water were being mixed at one point to the desired temperature and if some other cold water faucet were open in the line an immediate pressure drop, of cold water, would result with the effect that the hot and cold water mixture would be thrown off. More hot water would be supplied than desired and in severe cases scalding might result. A thermostatic mixing valve is shown at the right in Fig. 4, for controlling the hot water supplied to the shower in the master bathroom. This of course guards against scalding in this installation. On this job, without the individual hot and cold water supply lines, there would be only the annoyance of irregular temperature.

Fig. 7—Below is a view of the sump pumps. The cold water supply header with valves is seen at the lower right. The lines to the different fixtures are carried underground



The second line on the water supply header shown in Fig. 7 runs underground as indicated in Fig. 10 and serves the laundry tray and basement lavatory. The fixtures which the other lines serve are indicated by the plan views of Figs. 9 and 10, especially the elevation at the upper right hand corner of Fig. 10.

As stated previously, a private sewage disposal sys-

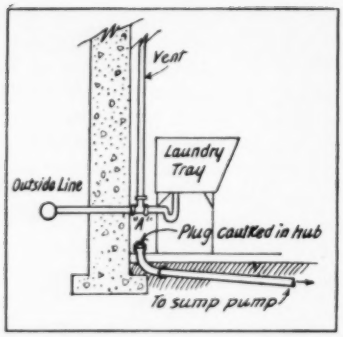


Fig. 8—Above is an elevation showing the provisions for changing the drainage of the laundry trays when the municipal sewer is installed

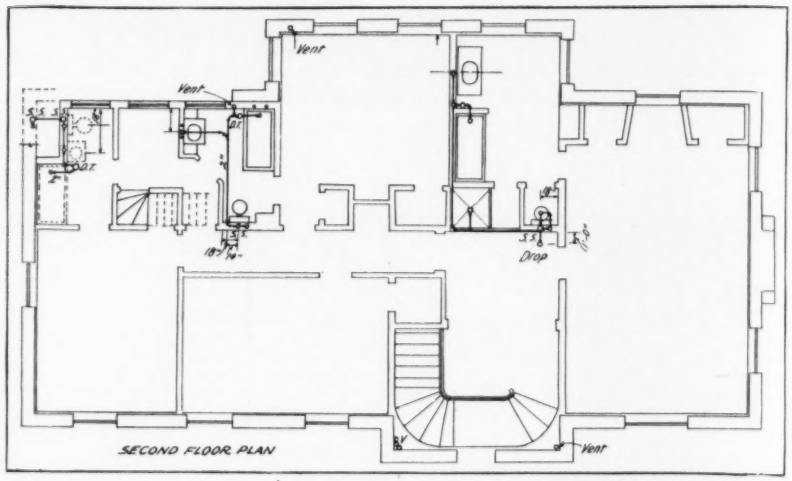
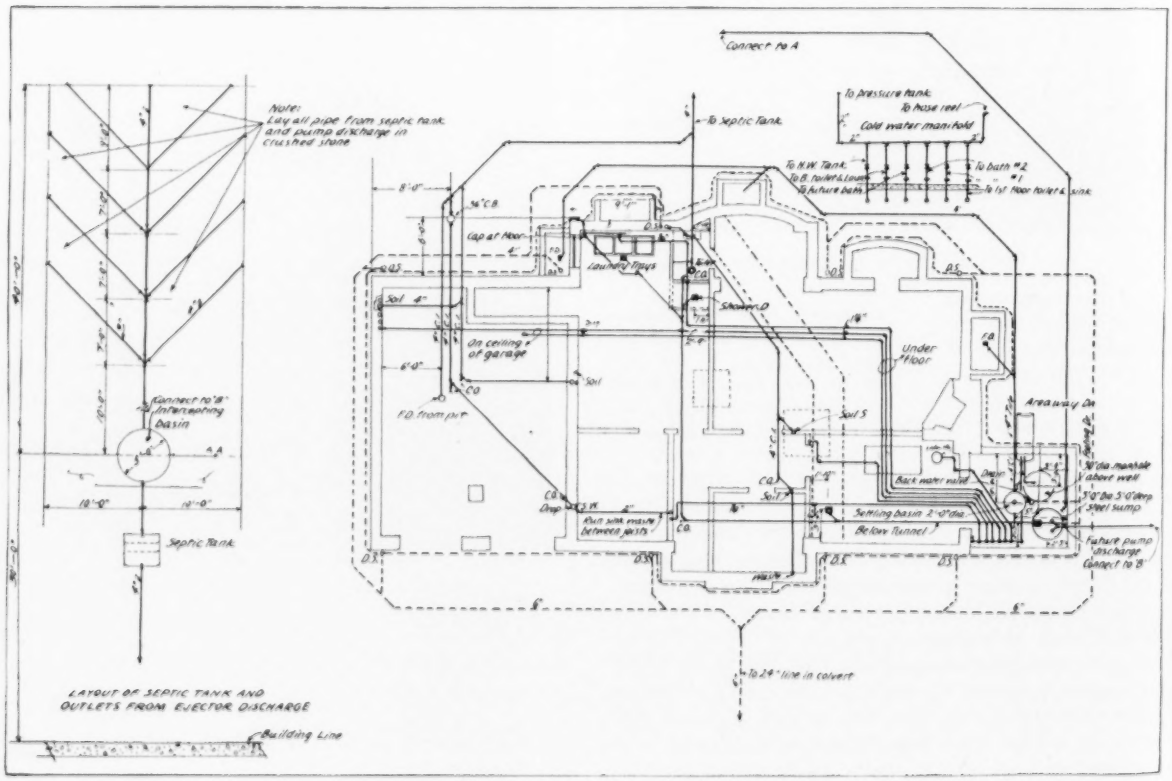


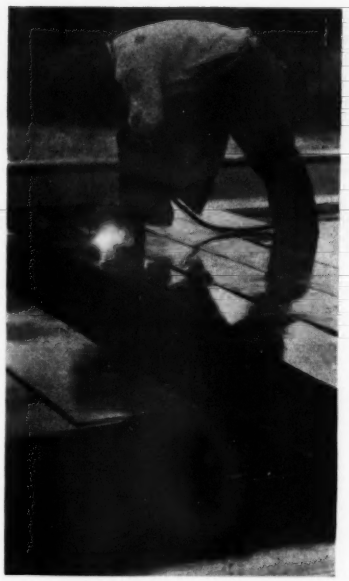
Fig. 9—This shows the second floor plan and the fixture outlets which are served individually by separate supply lines

tem was necessary because of the municipal system not being extended to serve the locality in question. In this regard the first thing that had to be taken into consideration was the nature of the soil. The upper soil was found to be well suited to the installation of a sewage disposal system. Below the upper soil there was found running sand and below that was a layer of hard pan. At the next lower level porous material similar to that found in the first layer was encountered. The basement floor level is relatively deep and contains a toilet room in addition to the laundry facilities. The level of the basement floor, accordingly, determined the level of the inlet pipe to the septic tank. The layout of the sewage disposal system and all of the drains connected to the pipe are shown in Fig. 10. Although the septic tank layout is shown at the left in the drawing, on the job it is installed at the rear of the house as indicated

(Continued on Page 111)

Fig. 10—Here is the complete layout of the water supply and sewage disposal system in connection with the basement floor plan





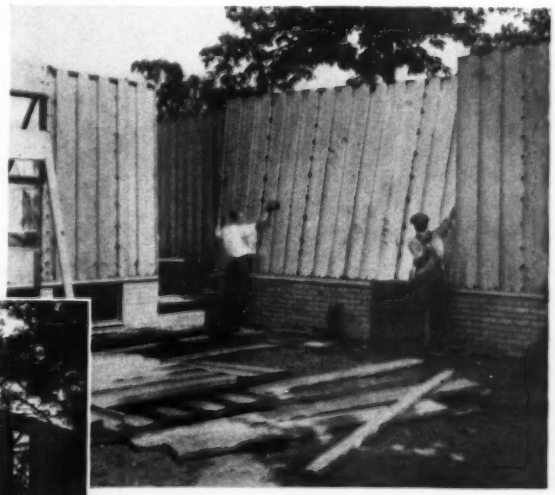
Here is an operator welding electrically the sheet steel sections which were used in making up the floor. Note the "Z" shapes and the box construction which results

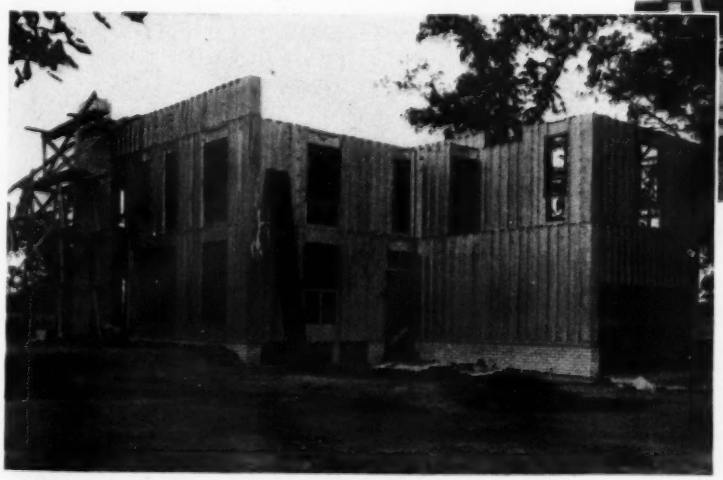
A house which is moved to the site and put together like stage scenery is shown in the two illustrations at the bottom of this page. The lightness of the construction is forcefully illustrated by the view showing the size of the wall section which is being handled by only two men.

Welded House Introduces New Type of Construction

A FRAMELESS steel house has just been completed in a suburb of Cleveland, Ohio. It has been developed to demonstrate the adaptability of sheet metal to the construction of low cost homes. As a new method of construction, reports are that it can be used to reproduce almost any type of architecture, with the result that it is not necessarily for the purpose of standardizing homes.

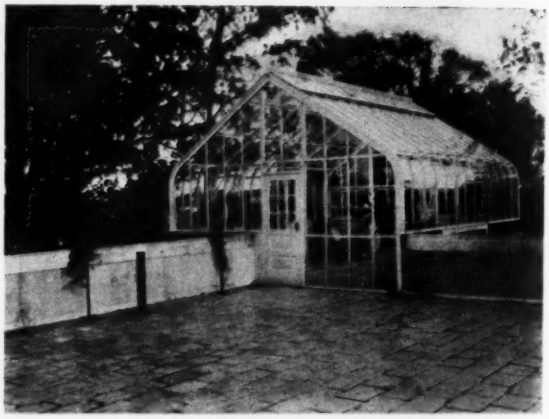
The building shown here is a single family residence containing seven rooms, two baths and a double garage. In the basement, there are storage rooms, a large recreation room, and a boiler room and laundry. The view at the top of this page shows some of the individual floor sheets being welded together electrically. These sheets are formed longitudinally in the shape of a long "Z," the edges being lapped over each other to form a series of metal boxes. In erecting the house, the lower floor was completed first. Then the first story walls were set in place as illustrated in the picture at the right. These walls were made up of box-like corrugations and were assembled in a factory with door and window openings in place. The completed wall sections weigh slightly more than 2 lb. per sq. ft. and were hauled to the job like stage scenery.



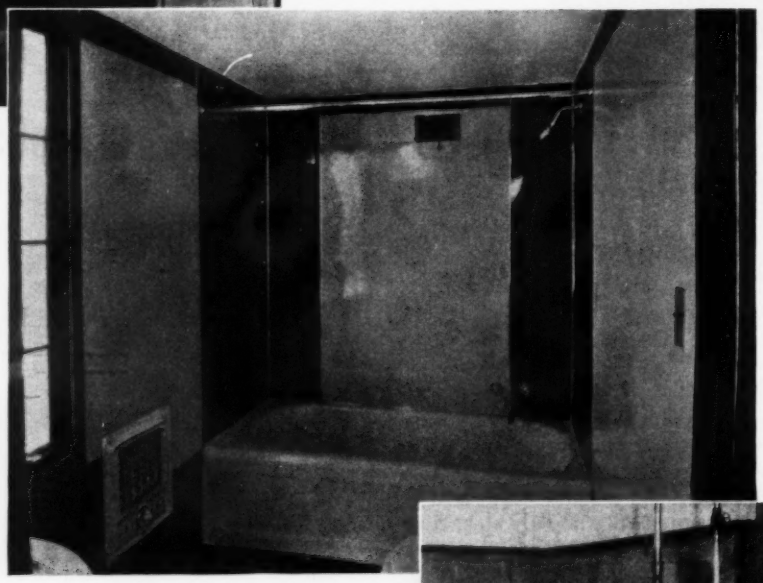


The exterior of the house is heavily insulated against heat or cold with an outside finish consisting of porcelain enameled shingles, designed to eliminate the necessity of painting. The heating and plumbing systems are of the conventional types.

Above is a view in the living room of the completed steel frameless house. The fireplace is shown with decorative metal strips in the wall

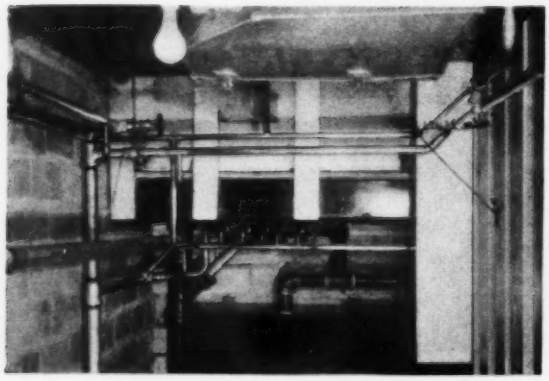


The above view is of the roof which shows the flat deck designed as a children's play space and the roof greenhouse

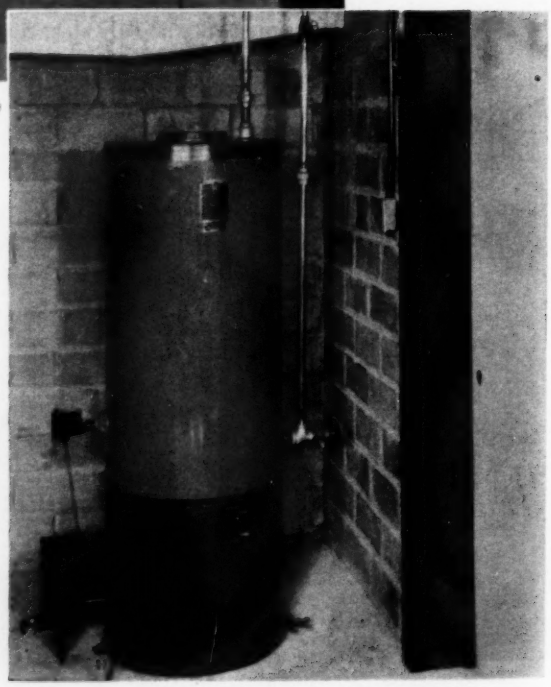


The bathroom is shown at the right. It will be noted here that there has been no radical departure from the strictly modern equipment of the conventional type of home

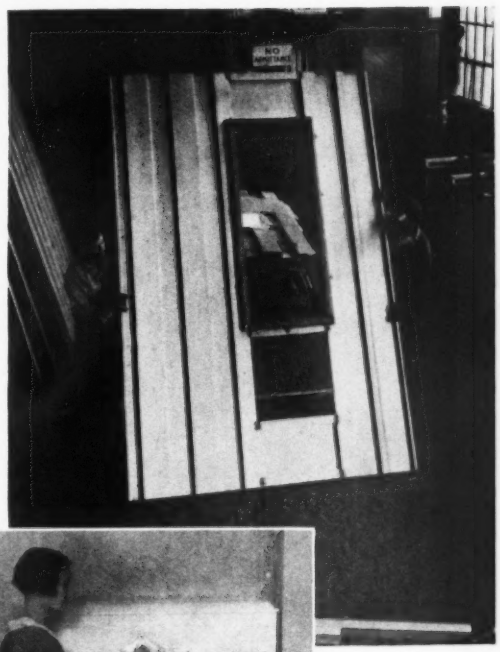
Below is a partial view of the basement. The piping at the right is anchored to the metal wall section by the metal brace



At the lower right is shown the oil burning water heater which was installed for the domestic hot water supply



This pictorial story of the welded steel frameless house in Solon, Ohio, illustrates that while the construction is radically different from that to which we are accustomed, so far the interior is just what one would expect to find in one of the modern homes of the conventional type

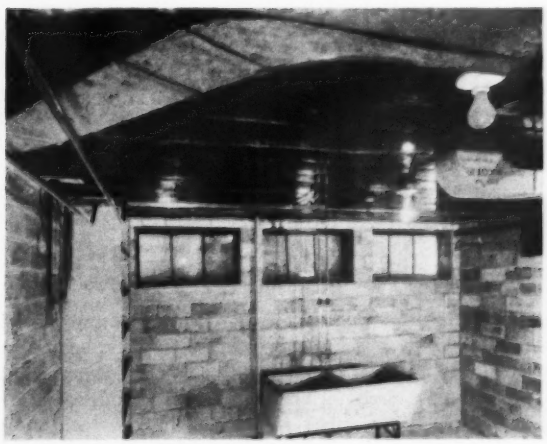


Here is one of the assembled wall sections of the steel house as it appears in the factory. Notice the steel window in place

Below is a view of the second bathroom showing the metal shower stall in place

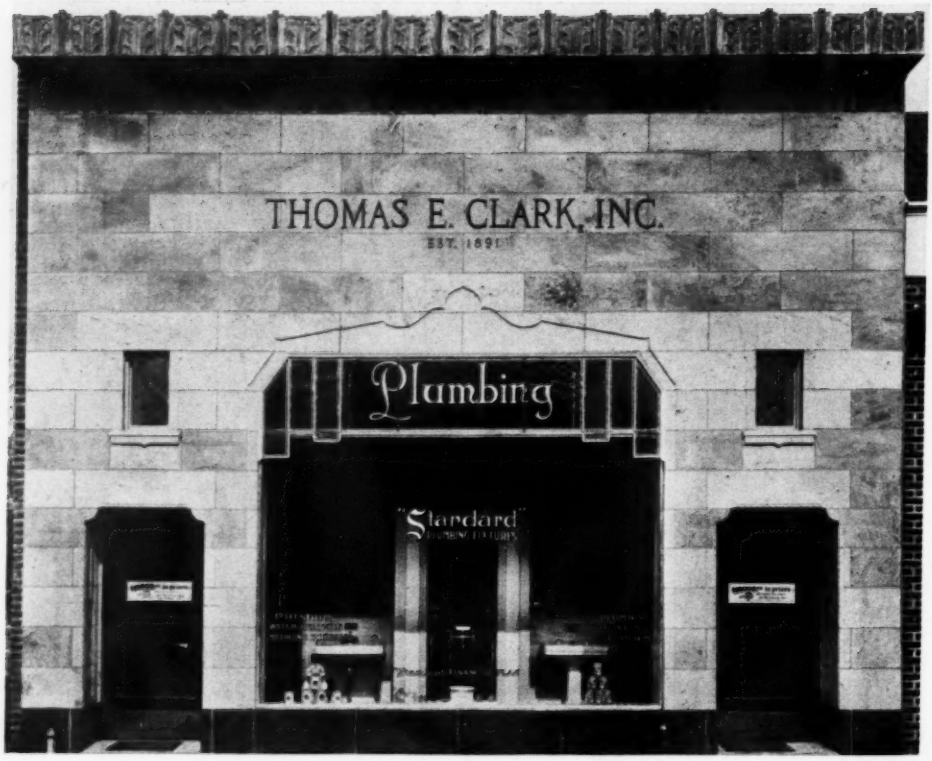
The kitchen with its electric stove and refrigerator is shown above

Below is the laundry space in the basement. The underside of the metal sections comprising the first floor form the finished ceiling



ORDER

—the sign of Good Management



This beautiful store building gives the prospective customer his first impression of the order and efficiency that characterize the firm's operations

THOMAS E. CLARK of Thomas E. Clark, Inc., in Washington, D. C., believes that an efficient office system is just as important as an efficient shop. Thus in his office is found the latest improved filing cabinets all neatly indexed and properly equipped to expedite the work of the bookkeeper and office manager.

One thing that Mr. Clark has evolved which he finds helpful is an estimating sheet so arranged as to present a complete check on every item that goes into a plumbing job so that nothing will be overlooked. This is 11 by 14 inches in size, printed on one side, and shows the day, hour, address, location of building, sewer and water main with a column of three listings, thus:

Quantity	Items	Actual Cost

"Another thing that we do on our contract work," said Mr. Clark, "is to keep the cost of our labor and the cost of our materials, which include the fixtures, separate. I can take a competing bid on a job and I can tell exactly how much, if any, that plumber will run over on material. I can tell right from this sheet what I estimated and so would correct it on the next job if the estimate ran over or under.

"If you come in and show me a set of plans of an average six room house and tell me what you want, this method enables me to tell you in five minutes about what it will cost. I can tell what the job will cost just by looking up the records here. I have complete records for the last ten years. I know what my first job cost me per apartment and what it would cost me today. Of course, that changes with the cost of labor and materials.

"We have been most particular in putting in everything that can possibly take place on the job. This estimating sheet contains a list of every line of material used in the plumbing for the average home, apartment house, store, any new construction and remodeling. As this offers a complete check, we can go over it after we have gone over a sheet of plans and see if we have forgotten anything. I can also check against previous jobs I have done and see how my estimate measures up, or

In the office—everything handy, with records that keep sales work, estimating, billing and service at the peak of efficiency

"The atmosphere in which we present the products we sell determines their acceptance," says a merchandising expert. In this plumbing establishment orderly methods have built a business with an enviable reputation.

see if I have left something out, or if I am duplicating anything.

ESTIMATES ATTRACTIVELY PRESENTED

"We also work to make up our estimates in an attractive manner with a loose leaf system and a stiff cover binding, a sort of booklet arrangement. All the pictures are cut out and pasted in at the proper places so that the owners can see just exactly what they are getting. Our specifications are complete in every respect. This applies to the better grade of remodeling jobs only. Taking pains in this way, our bid is more likely to make a favorable impression on the customer and some actually have called us up when we did not get the job to compliment us on how nice it looked."

Each man going out on a repair job or new work gets a job ticket, a stiff piece of cardboard with instructions on the reverse side on how to handle it, and with space for the day, employe's name and address, and a space for each day in the week, thus: Day, hours, job, and a space for the total number of hours put in for the week. The reverse side also contains a column for expenses and remarks. These repair and job cards are turned in every Thursday night or Friday morning, as the men are paid off on Friday evening. Each week thus ends on Thursday.

The bookkeeper then checks the job with the weekly time card to see that it corresponds, and before Mr. Clark prices each job to the customer. A job ticket is made out for each job and is attached to the employe's time card. This shows the day, owner's name and address, to whom it is to be charged and location of work, followed by a space for description of work and materials used and the price. Underneath that are five columns for the name of the mechanic or mechanics on the job, the name of the helper or laborer, day, hours, carfare if any, etc.

"When we make out a bill," Mr. Clark continued, "we add 5 per cent on all our bills and have a special stamp that if the customer pays on or before the 10th of the month, a 5 per cent discount is allowed. If the customer does not take advantage of that, we get 5 per cent for carrying that account 30 or 60 days.

"The office girl makes an original bill and a carbon copy. The copy goes in the ledger. We have two ledgers—one for the unpaid bills and one for the paid bills, arranged alphabetically. It is a very simple arrangement—all in alphabetical order. One contains the new bills just sent out at the end of the month and when that bill is paid, it is stamped paid and put in the paid bill ledger. In that way we always have a duplicate of the bill we sent the customer.

INFORMATION IS HANDY

"All our job tickets are in one file and all contracts and estimates in another. We have separate folders for each contract. We also have a price list, index and everything is priced right here alphabetically. Suppose a customer comes in and wants china handles, and I am not here, the young lady in the office can tell just what they cost. I also have everything priced on articles in the stock room in plain figures. Say you want a ¾-inch ell, you will find the price right on it. Every bin is marked and the selling price is right on the front. I bought some steel tabs and nailed them on, and slipped in a white piece of cardboard, which is neatly printed in large letters so it can be seen from the floor. The stock room and brass room is gone over each Saturday and we give our order each Monday for delivery. Our

Every bin labeled, and priced, so that, from the floor, the topmost label may be read with ease

stock room is arranged with water pipe fittings on one side and on the other side are drainage and vent fittings.

"We keep a 3 x 5-inch card index of all active customers, with the inactive customers in the back. We have a complete mailing list of all customers living in Cleveland Park, where our store is located, and when the prospect becomes a customer, the card is taken out and put in the regular customer file. We also have a card index of all architects filed alphabetically in one drawer, and of all realtors.

"Occasionally we make a drive on inactive customers to get repeat business from them or find out what the trouble is. Say we have 260 active customers and 340 inactive. We think that proportion is a lot too high and so every now and then we send them a letter or a piece of advertising literature just to keep them reminded of us. Or sometimes we have a follow-up in person if anything was wrong. We have traced as high as 10 per cent of new business to following up inactive accounts.

"We employ four men the year round and extras when needed. We have not employed a helper in the last five years in order to cut down our overhead, nothing but journeymen plumbers. It also adds up the overhead cost for the customer.

"On contract work everything is delivered right to the job and all the plumber takes is his tools. Any surplus left over is brought back by our trucks, which are used as plumbing shops on wheels, and handle principally customer repair jobs.

EACH MAN ON HIS OWN

"We place every man in charge of his own job and expect him to complete it to the satisfaction of the customer. We operate on the bonus system. We allow a certain length of time for him to do that job in and if he saves time, we give him 10 per cent of what he saves. We have been operating this system for the last five or six years and it is working out fine.

"Another thing I do with my men is to pay them a commission on all they sell. If we send them out to repair a flush tank they get nothing, but they do if they sell a laundry tub, a toilet seat, or a pair of faucets. I give them a commission on that sale. I pay 5 per cent but to the men, I don't talk in terms of percentages. I tell them there is $2 in it for them if they sell a certain item, or words to that effect. They can visualize $2, but when you talk percentages they don't get it half so quickly, nor do they get the same enthusiasm. This stimulates their sales initiative. They feel they have an interest in making the business grow. Every time they sell something they make extra money and it makes them better salesmen.

"We push hot water heaters and showers in the spring and in the fall of the year our main business is overhauling heating plants. Our two best sellers have been closet seats and combination sink faucets. We have them on display in the store and push their sale when we go in the home to do a repair job. We have also sold quite a few glass shower doors. It is something different. Everybody has been using the curtain and rod. We have been trying to sell them on the idea and have fairly well succeeded. We are installing doors on old showers and spray shields for bath tubs."

How We Adopted Welding as a Tool in Heating Work

ROBERT D. WILLIAMS, who is president of the Heating and Piping Contractors National Association and an officer of Baker, Smith & Company of New York City, described the early and recent welding experiences of his company, at the thirty-third annual meeting of the International Acetylene Association. Some of his remarks are reproduced here.

YEARS of study over the problems with which Piping Contractors are constantly faced in the conduct of their business definitely show that little things invariably solve the difficulties with which they are confronted and point the way to practical solution.

It was one of these so-called little things that brought about the expediency caused the Company I represent to enter the field of pipe welding. Early in the year 1917, we found ourselves called upon to do our assigned share of the piping work on some eight or ten United States industrial war plants. We were instructed that speed on this work was absolutely necessary, as the lives of thousands of American soldiers and sailors were dependent on the rapidity and efficiency with which these projects were handled, and made ready for operation at the earliest possible moment to produce and provide the munitions and equipment very badly needed by our forces who were then in transit to foreign lands.

We thereupon entered into the spirit of the movement full heartedly, enthusiastically and with patriotism. Plans were designed, materials broken down and ordered in large quantities, when suddenly out of a clear sky we became aware of this very disturbing fact that, while pipe was available in all sizes, cast iron fittings of all kinds in size of 6 in. and over could not be secured in sufficient quantities to comply with our requirements. Due to the demands which were then being made, surplus stock in the warehouses of the manufacturers and jobbers were practically wiped out, and though the foundries in all parts of the Country were working night and day, it was impossible for them to provide the supply of castings required without entailing long drawn out delays, to which we would have to add further delays caused by the uncertainty of transportation, due to the congestion then prevailing on the railroads, rivers and public highways. This naturally was a heart-breaking situation, apparently insolvable, but thanks to modern ingenuity on the part of some wide-awake business men, we were able in this emergency to enlist and call into our service the then little known welding torch, and through this medium, handicapped though it was at the time by the scarcity of skilled operators, we did our job.

Another little example of the things we were called upon to accomplish during the world war period occurred one day later in the year at a certain cantonment on which we were engaged. On one of my inspection visits, the Colonel in charge of that cantonment called me into his office and informed me that he had received orders to prepare and provide quarters immediately to receive 1,600 soldiers who were ill with flu. Tents would not do.

A HURRY-UP JOB

They must have proper housing facilities, and it was imperative that this housing project should be ready and in shape to receive these men within four or five days at the latest. This officer further informed me that he was in a position to build the quarters required within the time set, but what could we do about heating them? My reply was that, if he would secure the boilers necessary to supply the steam, we would make every effort to assist in accomplishing his objective. What happened? The Colonel could not secure the right kind of boilers required in the limited time called for, so he, by some means best known to himself, secured two locomotives from a nearby railroad, built a siding from the main track and brought the locomotive under their own steam up to the side of the Hospital he had built. Thanks to this cooperation, we were able, by a generous use of the welding torch and some odds and ends of material to comply with the requirements demanded, which would have been impossible otherwise, and when our soldiers arrived, the hospital was ready for their occupancy.

Thus began the early stages of our welding experience, brought about not through any intimate or practical knowledge of our own, but due to the exigency of the conditions with which we were faced. Profiting, however, by the experience and knowledge that came to us during that very trying period some 14 or 15 years ago, we have since made oxy-cetylene welding part and parcel of our regular routine practice, as it fulfills beyond question a requirement that has in the past given us considerable anxiety, particularly in the modern type of tower building, such as the Empire State, Lincoln, Chrysler, Bank of Manhattan and Radio City buildings.

In this type of building, engineers have found it necessary, on account of their great height and for economical and efficiency reasons to divide the piping work into four or five zones. This method usually means that vertical main supply and return pipes are run up in one or more shafts, and because of the necessity of conserving every inch of floor space on account of its rental value to the owners, these shafts are in most cases so small, that the piping after installation is practically inaccessible, and future repairs are out of the question. Therefore, it must be installed with great care so that the possibility of leakage is as nearly impossible as human hands can make it. Welding therefore has provided the way in these cases to avoid later costs.

When these vertical pipes are installed, provisions are made in each zone elevation in a general way approximately on the 11th, 32nd, 46th and 58th floors, some 6 in. or 8 in. below ceiling beams, and the heating mains which run around and hang at these zone ceilings at these points are welded to the vertical shaft pipes, and here again the provision arises on account of high rental values, that the heating mains on these zone ceilings which run into hundreds of lineal feet must not be exposed or seen. Therefore, with this thought in mind, the architect designs a greater height on these zone floors and provides furred ceilings between which ceiling and the steel beams above, the main pipes must be installed.

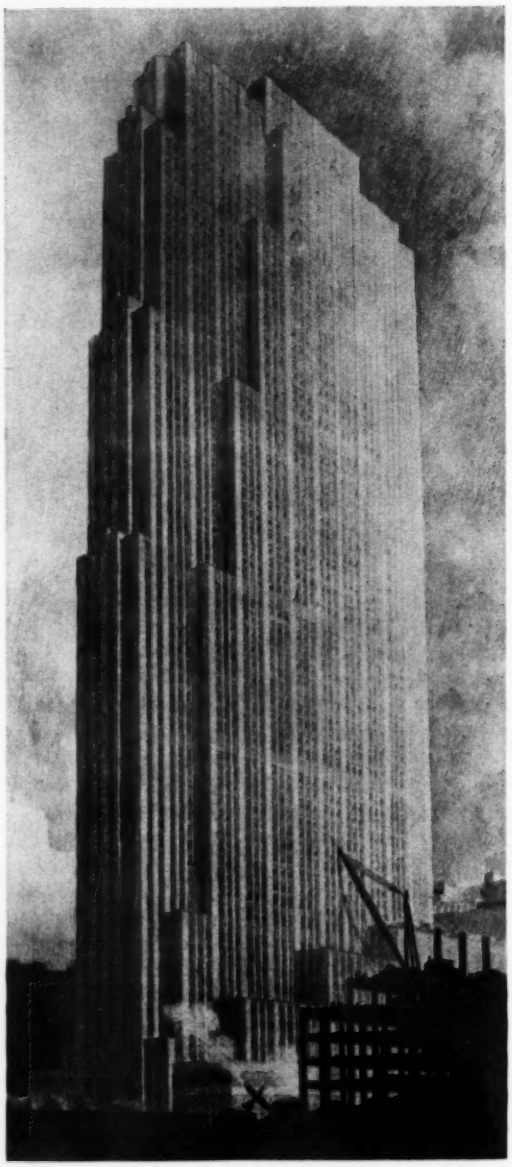
Specifications and the contract under which the piping is furnished and erected, call upon the heating contractor to protect the owners and assume any and all responsibility for a period of one or two years from the time of acceptance of the job for all damages that may be due to or caused by defective materials or workmanship, under this clause, "Should leakage occur in the work the contractor installed, and should damage result therefrom to the decorations, walls, floors or furnishings, he is liable and must pay the bill."

Therefore today, in view of this fact, it is common practice, as a matter of self-preservation, and in order to overcome this very dangerous risk, to weld these mains from end to end, thereby insuring and reducing the possibility of the hazard to a minimum.

The heating contractors in New York City also find that boiler installations in large buildings are gradually but surely becoming a thing of the past. Central power plants line our streets with underground steam lines and supply our various new and old buildings with steam.

After the steam pipes have been brought into a building from the public service plants, they are connected to one or more meters. The steam pressure thus supplied is anywhere from 135 to 150 lb. gage. After its passage through the meter or meters, it is piped either direct to certain units requiring high pressure steam, or reduced by means of a reducing valve and connected to a large separating header, and from this header, by means of a number of nozzles, each of which is under separate reducing valve control for graduating purposes and thence from these controls to the various systems of the building such as kitchens, laundries, tempering coils of ventilating systems, hot water tanks and the low pressure heating system. Invariably, these controls are placed in such a manner as to be under the immediate eye of the Operating Engineer. The headers and nozzles in connection

(Continued on Page 60)



This picture shows one of the buildings of Radio City in New York City, the welded heating work on which is being done by the author's company

Jere L. Murphy of New York City and Wm. W. Hughes of Minneapolis advance their

Views on a Half Century of Plumbing Progress

To the Editor

Jere L. Murphy of New York City deserves a lot of credit for his article "A Half Century of Plumbing Progress." Starting as he does in the year 1874 and showing the various stages in the progress that has been made from time to time, he brings out very clearly the fact that the plumber has kept step in matters of sanitation.

Of particular interest is his description of the first methods of ventilation wherein the vent pipe was merely extended from the crown of the trap out through the wall. One can well imagine the objections to this style of venting.

DEFINITION OF TERMS

Mr. Murphy makes reference to loop ventilation but a reading of the description of this type of venting brings one to the conclusion that the loop ventilation to which he refers is commonly known as crown venting and as such has not had the approval of plumbing inspectors and plumbers for many years.

As Mr. Murphy points out, all plumbers coming in contact with old crown vented installations find that the vent pipes are plugged solid with grease, scale and slime with the result that the vent pipes become of no value.

This has lead to the adoption of the system of piping known as the continuous waste and vent system.

The old time plumber was a worker in lead. To install a kitchen sink some thirty odd years ago, it was customary for the plumber to run a lead waste pipe from the soil or waste stack to a point under the place where the kitchen sink was to be located and then to bring this pipe up through the floor. A vent pipe, also of lead, then was extended from the vent stack down and through the wall fairly close to the sink location.

Along came the carpenter. He made a cup-board and support for the sink. With the sink in place, the plumber proceeded to install a lead sink trap, a lead waste pipe and a lead vent pipe; all of which required a great deal of bending and jointwiping.

The result was a work of art but from the standpoint of practicability it was the source of much grief. The house-wife used the cup-board under the sink for the storage of pots and pans and kettles and the lead trap and piping suffered accordingly. The waste backed up in the vent pipe and plugged it solid. Water found its way in and around the sink and the wood-work rotted away. Bugs of one sort and another thrived in that cup-board.

Then the plumber suggested the placing of the kitchen sink on brackets and the era of open plumbing was upon us.

The lead plumbing which then was exposed to the public gaze brought many and rapid changes. Progress extended from the vented S-trap to the vented half S-trap and then someone brought forth a waste and vent tee and that brought into use the plain P-trap and the continuous waste and vent system now in vogue.

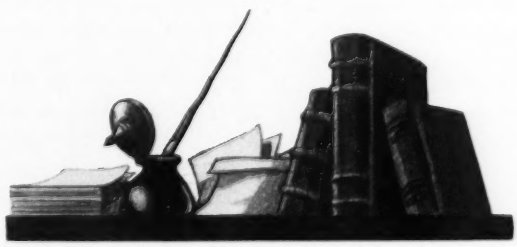
Loop or circuit vents have their place in the installation of batteries of closets, floor type urinals, or shower stalls because, the size of the vent pipe used for this purpose, makes it impossible to create a stoppage within that vent.

The building of extremely high structures has brought about new conditions.

In the development of vent branches one may well consider how the original vent branches were connected to the lead closet bends. In time, these vents, being below the water line of the bowls, filled up and the vents became useless. This led to the invention and adoption of fittings which have made it possible to install the vents for closets so that there is little or no danger of stoppages.

CONNECTION OF ORIGINAL VENTS

Many codes originally called for the installation of loop vents at the highest points in the branches to batteries. This resulted in a dead end which subject is ably covered by Mr. Murphy in his article. Now we find that loop vents are connected to the run between the two closets most remote from the stack, thereby making it possible for the flow of water from the end closet to clear and keep clear the end of the vent pipe where it connects to the run.



Mr. Murphy's other conclusions, based on his long and varied experiences in the plumbing business, are highly commendable and there is every reason to believe that men like Mr. Murphy will continue to study and to improve installations so that the next

thirty years will see equal if not greater improvements, in the trade, than have made their appearance during the past fifty years.

Progress results from active thinking, experiences and observations and we have many active thinkers in the ranks of the plumbers. We have many men, both masters and journeymen, already equipped with knowledge and experience and who are adding to it every day. Also, we have new problems under observation which will demand the application of clear thinking and experience to solve.

HOW PROGRESS RESULTS

All plumbing should be inspected during and after its installation and now, with the increasing number of handy men who have been turned loose in the world, it should be under the jurisdiction of the board of health so that continued inspections and examinations can be made from time to time, the better to protect the user of plumbing from the mistakes of the handy man.

The change in traps brought about changes in the materials used for waste pipes. Now we recognize that plumbing traps should be vented; also that the continuous waste and vent system has a great deal of merit. However, experience has also taught us that there are places where it is also practical and advisable to install wet or washed vents; other places where a vent is superflous; still others where special provisions must be made for the disposal of wastes and the elimination of air by the installation of piping systems which were unheard of a few years ago; and numerous places where it is advisable to install loop or circuit vents. The word loop is used here as we find it in the Hoover code and in numerous other present day codes.

Most codes permit the installation of two or three lavatories with one trap, waste pipe and vent. From the standpoint of economy there is merit in this type of installation but from the standpoint of appearance and service there is nothing better than the individual trap, waste pipe and vent.

In brief, with the passing from the lead pipe age and its crown system of venting we have entered the age of mechanics for it is truly a mechanic of ability who can now install in a large toilet room a battery of lavatories in unlimited numbers so that when those lavatories are finally hung in place on the wall it will be found that every waste and supply pipe is the same distance from the floor and every waste and supply opening is centered exactly under the trap outlet or faucet so that the whole installation presents a picture of mechanical skill which could hardly have been approached in the lead pipe age.

The wet or washed vents have their place in modern plumbing installations. Consider for a moment a sink stack two, three or four stories high, with one or two sinks on each floor, all of them located close to this stack. Instead of a conglomeration of waste and vent pipes a simple installation based on the use of a stack greater in capacity than the combined areas of all of the waste pipes feeding into that stack brings into service a simplified installation which cannot be affected by syphonage, back pressures or stoppages. A similar installation could be provided for lavatories.

Frequently a sink, lavatory or slop sink can be installed at the extreme end of a battery of closets or urinals with the waste from this fixture connected to the vent pipe at the end of the battery. By so doing we eliminate a dead end and create a wet or washed vent with the absolute certainty that this vent will always be open.

Again we find it possible to install a lavatory under conditions which normally would call for a waste line below the floor together with the upright waste and the vent for the same, by merely making the connection to a sanitary tee placed in the stack. True, this fixture will be the top fixture, whereas we usually strive to make the closet the top fixture and thus avoid the installation of a vent for the closet, but even with the closet and lavatory both installed without revents we would still be making an absolutely sanitary installation, without any danger of syphonage or back pressure. The distance from the stack to the fixture should be very short and should be covered by code.

W. W. Hughes.
Minneapolis, Minn.

My Dear Mr. Hughes—

A loop or circuit venting is defined as that hook-up where the waste and vent line are looped together and the waste pipe is depended upon to convey water and air at the same time. In other words, it is a double duty pipe. I believe that the plumbers should select the best type of plumbing and advocate that type of plumbing.

I believe that an air pipe should be constructed so as to deliver air at every point of the plumbing system where air is required and at the same time, remove from the interior of the plumbing piping system excessive air where necessary.

I believe in the continuous waste and vent system and I also think that every trap should be vented individually, but I do not believe liquids of any type should pass through the vent pipe. A vent pipe should be only a carrier of air. The reason for this is if any liquids do pass through the piping and the piping is made to convey both air and water, after the piping is in use a short time the diameter of the waste pipe decreases and the pipe no longer is able to take care of both air and water.

Crown venting is different. Crown venting is where the branch vent is connected with the crown of the trap.

Both loop or circuit venting and crown venting were tried out in the early days of venting but they were not successful. Care should be taken that the vent pipe is

connected with the waste pipe in such a manner that there is no opportunity for stoppage. In other words, a vent pipe should be run with much more care than a waste pipe. When a waste pipe is clogged, you are aware that it is stopped, but when a vent pipe is closed, it is not apparent to the person who does not thoroughly understand the plumbing subject.

Irrespective of the size of the waste pipe it will close at one time or another. This is governed by time and by the type of materials passing through that waste pipe.

INSPECTIONS AND TESTS

I personally believe that there should be inspection of and tests applied to all piping systems. That is, either smoke or peppermint tests, preferably smoke. These tests, however, should be made by experienced plumbers.

I agree with you that in every tall building you meet different conditions than in lower buildings. I also agree that there are many changes which will take place in our industry in the future and I believe they will come through closer co-operation between the plumber, the structural engineer and the architect. In other words, a building should be laid out correctly in order to accommodate correct plumbing piping. It is very often a hazardous job to try to get plumbing piping to fit in a building where special attention has not been given to it by the structural steel engineer or the architect. Special provision should be made so that the plumbing piping can be installed in the most practical and economical manner.

I further agree that plumbing piping should be inspected throughout the construction and installation period and even after it is installed.

It is my belief that the handy men who work around buildings and who have not had training are very dangerous to the health of the American public and that this practice should be discontinued. I do believe that the board of health is the proper authority to enforce such regulations. Plumbing is a health measure and it should be looked upon as such. Handy men should have nothing whatever to do with plumbing other than to install a washer or take care of an emergency leak. Nothing of importance in the line of plumbing should be done by others than those who are duly qualified.

I do not believe in wet vents. In my opinion, the running of vent pipes is much more important than that of waste pipes. Also the running of both hot and cold water is important as it is absolutely necessary for fixtures to be supplied properly with water. The best interests of the American public would be served by going into the water supply system question more thoroughly. It should have more attention from the plumbers.

J. L. Murphy.
New York City.

To the Editor

I have read and re-read the letter from Mr. Jere Murphy and after delving into various books on plumbing have arrived at the conclusion that he and I are talking about the same things, but we are using different words.

In Starbuck's Vol. 4, Page 48, there is a drawing of two examples of circuit and loop venting and I agree with Mr. Murphy that this is not good plumbing practice.

On the other hand we find that the Hoover code refers to circuit and loop venting as applied to batteries of closets, pedestal urinals, trap-standard slop or shower stalls and Taggart in his book of questions and answers as applied to the New York City code refers to this type of venting on Page 41 as yoke venting.

So it may be either yoke, loop or circuit venting and regardless of the name it has been in the past and is today considered an ideal type of ventilation for batteries of closets, floor waste urinals and shower stalls. I question their use for trap-standard slop sinks although it is mentioned in the Hoover code.

I still think there is merit in the wet or washed vent when used for sinks or lavatories. The waste pipe is increased in size for an installation of this type; it is so much larger than the trap which it serves that it is impossible for the waste water from the sink or basin to cause syphonage; and it simplifies the installation to a marked degree.

We also consider it an advantage to waste a basin through the 2 in. vent pipe for a basement closet where the closet is connected to a horizontal run, because the use of this basin will serve to keep the closet vent pipe open.

There may be a decided difference in the waters used in various parts of the country, but it has been our experience that waste pipes do not become incrusted and thereby decrease in size.

WET VENT WITH LAVATORIES

We agree with Mr. Murphy that great care should be used in the installation of vent piping and call attention to Page 45 of the Taggart book, which shows a horizontal vent pipe below the fixture. This pipe should be run upright, if possible, otherwise on a 45 degree angle.

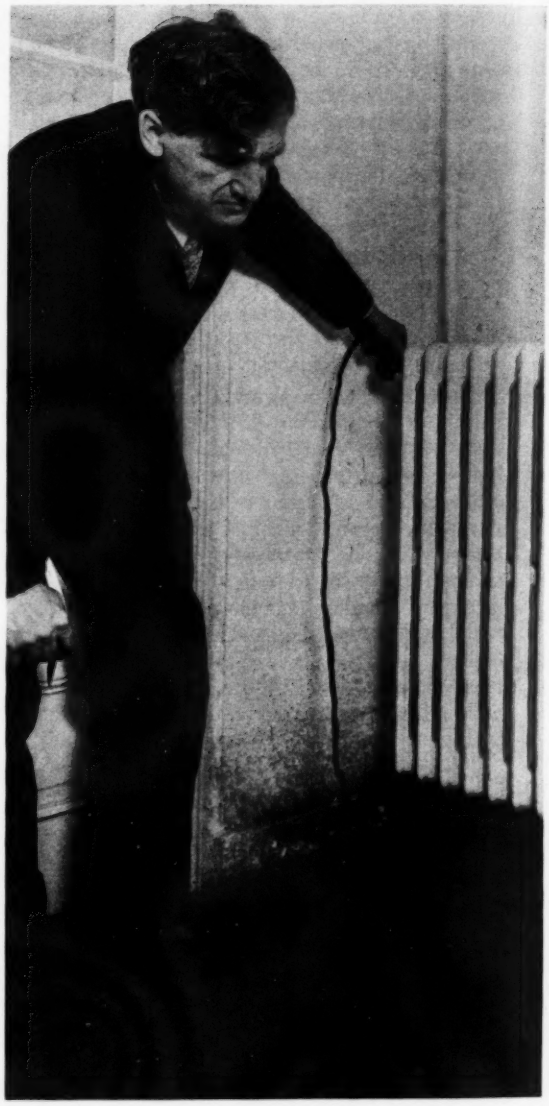
All in all, plumbing is pretty much what we make it as a result of experience.

Crown venting was a pioneer movement. Use proved that it did not serve the purpose for which it was installed. Thereupon the plumbers condemned the practice and since then have had their disapproval written into all modern codes.

The same fate has befallen many other innovations. It is my firm opinion that the plumbing business is progressing towards bet-

(Continued on Page 115)

When some radiators in a forced hot-water heating system are too hot and some are too cold, fuel is wasted. In balancing such systems, the author use thermocouples for finding the temperature drop through each radiator, as shown here.



Fuel Is Saved by in Hot-Water

Unbalanced Job Shows Annual

IN A properly designed and equalized hot-water heating system, each unit of radiation should receive its proportional share of the flow of water. This ideal condition will naturally produce the same drop in temperature in the water as it passes through the various units and will make the difference in temperature between the flow inlet and return outlet the same.

In a gravity system each unit of radiation acts as a pump which produces a thermal motive force from the drop in the temperature of the water passing through the radiator. In a radiator with sluggish circulation the temperature drop is high and it therefore establishes an increased thermal motive force. There is a natural but insufficient tendency toward the equalization of flow.

BALANCE FROM FORCED CIRCULATION

In a forced-circulation system such a tendency toward self-equalization *does not exist,* except as induced by the small part of the motive force which is present due to gravity action. The equalization in such a system should therefore be accurately provided.

The economic advantage of correct equalization becomes apparent when the cost of lack of equalization is analyzed.

Consider a heating system in which the average drop in temperature through the radiators under a given weather condition is, or should be, from 175 Fahr. to 165 Fahr., or 10 Fahr. The average temperature is 170 Fahr. Then, with a room temperature of 70 Fahr. the heat output will be 0.617 $\times$ 240 or 148 Btus per standard sq. ft. of radiation.

If now, as is often found in existing systems, a number of the radiators in the system show a drop of 25 Fahr. in place of 10 Fahr., the rooms in which such radiators are located will be cold. To make these rooms comfortable, the average temperature of their radiators should be 170 Fahr., which will necessitate raising the flow temperature to 182½ Fahr.

The balance, or majority, of the radiators will then have an average temperature of about 177 Fahr. and windows will be opened in the overheated rooms. The heat output of these radiators will be 0.673 $\times$ 240 or 162 Btus per standard sq. ft. of radiation. (See p. 98, *A. S. H. V. E. Guide 1932.*)

Instead of supplying 148 Btus per sq. ft. of radiation, it is necessary to supply 162 Btus, or 9 per cent more heat than would be required if the flow of water through the radiators were properly balanced.

In an average system, under such conditions of unbalance, where the average radiator is of 50-sq. ft. capacity and the annual cost of fuel is 30c per sq. ft. the total cost of fuel per unit of radiation is $15.00 per year and the loss due to poor equalization is 9 per cent of $15.00 or $1.35 yearly. During an assumed 25-year

The author of this article, ERWIN L. WEBER, who is a mechanical engineer of Seattle, Washington, is shown at the left testing a radiator. At the right is Howard A. Cook of the University Plumbing and Heating Company, also of Seattle.

Equalizing Flow Heating Systems

Loss of $1.35 Per Radiator

life of the building and heating system, the cost of poor equalization becomes nearly $34.00 per radiator. This indicates that correct equalization is essential to economy of operation.

Various devices are used for the purpose of equalization, but means of accurately testing such equalization are usually not employed. Frequently, the contractor attempts to determine the difference in temperature between the flow and return ends of the radiators by feeling them with his hands. Such attempts must be carried on at temperatures below 140 Fahr., as above 140 the sensation of heat becomes a sensation of pain and differentiation is impossible. Hence equalization at working temperatures of 160 to 190 Fahr. cannot be secured by this method. Furthermore, such a method is bound to be far from accurate, as at one radiator the right hand feels the higher and the left hand feels the lower temperature, and at the next radiator, perhaps in another room, the conditions are reversed. Moreover, different degrees of dampness of the hands affect the accurate feeling of the sensation of heat. At best, such methods can give but crude results.

THERMOCOUPLES ARE USED

The writer has recently employed thermocouples to determine the drop in temperature through radiators by contacting one thermocouple at the inlet and one at the outlet of the radiators. The readings on the galvanometer then indicated the difference in temperature at these two points, equivalent to the drop through the radiator. By this means a very accurate equalization is obtainable. The process is similar to the equalization or adjustment of a ventilating system by the use of an anemometer as an indicator of the air movement.

Previous to equalization, the temperature drops through the radiators would vary from 4 to 30 Fahr. on the average system as tested.

A satisfactory and economical method of equalization is with the use of valves or other devices, which can be externally throttled and set while the plant is in operation, analogous to the use of dampers or lock registers in a ventilating system. By measuring the air delivery at each outlet with an anemometer, the outlets can all be set to adjustment and balance. Similarly, by measuring the temperature drop through each radiator with thermocouples, the equalizing devices can all be adjusted to equalization and balance.

Usually it is only necessary to take two—or at the most three—sets of readings and make a similar number of adjustments to secure an acceptable balance.

The cost of taking such readings and making the required adjustments is considerably less than one dollar for each radiator, and will easily pay for itself in less than one year's operation through the fuel saved.

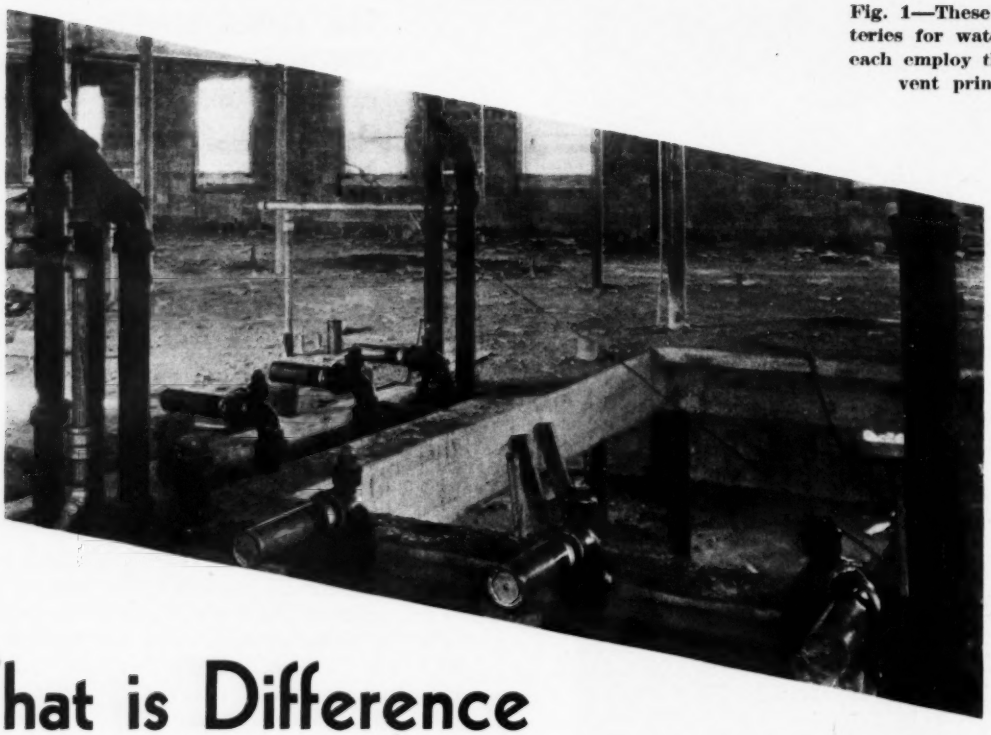


Fig. 1—These two batteries for water closets each employ the circuit vent principle

What is Difference Between Circuit and Loop Vents

By R. M. STARBUCK

THERE has always been a considerable amount of confusion in the minds of the plumbing trade regarding distinction between various types of venting, especially between continuous, circuit and loop venting. We have noted this in at least three instances in prominent city plumbing codes. In one case, circuit, loop, yoke and continuous vents refer to one and the same thing.

One of the principal state codes refers to "continuous loop or circuit venting."

Another instance in which this same confusion of terms appears, has again come to our attention, through a letter recently received. We give the letter practically in full, as follows:

"In my present position as an instructor of plumbing, I am making up lesson sheets on venting, and naturally have referred to all available information, and the more I look the more confused I become.

"I have come across your article, 'What Is Circuit Venting?' in DOMESTIC ENGINEERING of October 31, 1931. I am going to give my version of loop and circuit venting, and will refer to your article.

"In Fig. 4 in your article you call the layout a circuit vent, and I agree, but in Fig. 5 you call it loop venting and I still call it circuit venting. Let me explain.

"While I present no definition of circuit or loop vents, I will try to convey my thoughts by illustrations.

"I maintain (1) that circuit venting can be used only in buildings of more than two floors; (2) that the air is circulated, by-passed or short circuited from one stack to another; (3) that circuit venting can be used only on a battery of fixtures.

"I also maintain (1) that loop venting can be used only in one-floor buildings; (2) that the vent is looped back into the same stack; and (3) that the loop vent can be used only on a battery of fixtures.

"If as stated in your article, Fig. 4 is circuit vented, and Fig. 5 is loop vented, kindly tell me what Fig. C, shown in my illustration, may be. It will be noted that I have merely placed the vent stack at right angles to the soil stack. This relative position of stacks has little to do with it in my mind, it's the circulation of air.

HOW DOES AIR CIRCULATE

"One other thing bothers me, the question of how the air circulates. In your Figs. 4 and 5, if your arrows indicate the passage of air, then I feel I must again disagree. I maintain that with no fixtures discharging at the time, the flow of air will be just the opposite of that shown. The difference in temperature would in my mind tend to circulate the air as I have indicated in Fig. A. However, in the event of a fixture discharging, the air travel may change temporarily, due to the slug of water pushing the air ahead of it during its travel down

the stack, until it is relieved at some point below."

The illustrations accompanying this article are those which were submitted with the above discussion.

Figs. 4 and 5 of the October 31st issue, to which allusion has been made, are again shown in order to make our reply the more intelligible.

To our mind, and we believe in the opinion of a great majority of the plumbing trade, there is no question that Fig. 4 shows a circuit vent, and Fig. 5 a loop vent. Our correspondent states that Fig. 5, which we call a loop vent is a circuit vent. The difference in opinion really does not amount to much, for there is no difference in principle between the circuit vent and the loop vent, and in every plumbing code that we have ever seen, exactly the same rules of practice govern the two vents.

So far as we ever knew, the only difference between a circuit and a loop vent comes from the relative locations of the main soil and vent stacks. If the two stacks are at opposite ends of the battery of fixtures, the vent is a circuit vent, but if the two stacks are at one and the same end of the battery, then the vent has to pass or loop over the several fixtures to connect into the main vent stack, and then it becomes known as a loop vent.

Quite a common mistake has been to call the circuit vent a continuous vent, owing to the fact that the horizontal soil line continues on as a vent. This has also occurred sometimes in the case of the loop vent. If it was common practice to so consider these vents, there would be no objection, but as a matter of fact, a continuous vent is like the connection shown in Fig. 2E, where the vent connection is out of the top, and the waste connection out of the bottom of the same waste-vent fitting.

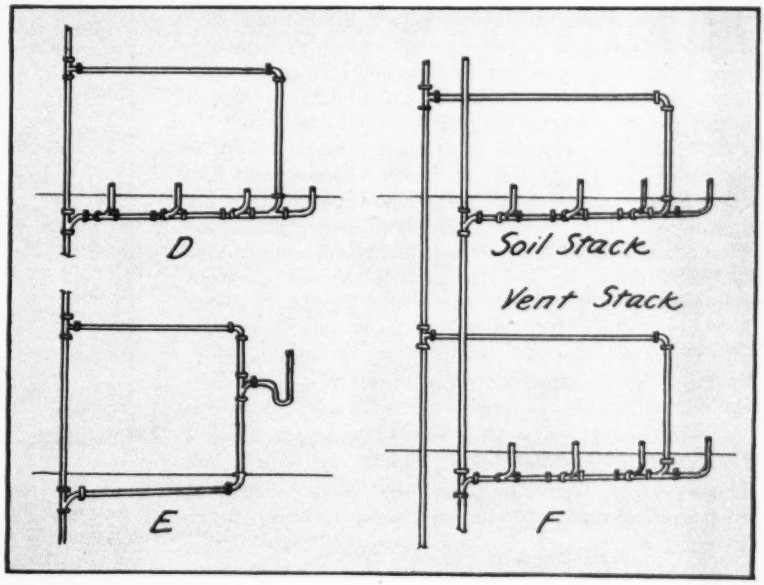


Fig. 2—D and F, above, show variations in loop vents, while the connections indicated in E represent a continuous vent. Note that D is for a 1-story installation, while F is for two or more stories

The statement is made that circuit venting can be used only in buildings of more than two floors, also that loop venting can be used only in one-floor buildings. We do not see that either of these claims is necessarily correct.

Referring to Fig. 4, it is conceivable that the circuit vent might be applied to a single floor, although for a single floor we agree that it would be more natural to apply the loop vent as in Fig. 2D. As a matter of fact, the circuit vent is very often applied to batteries of fixtures on two floors and to as many floors as required.

The claim that loop venting can be applied only to one-floor buildings, and that a loop vent must connect back into the same stack (as in Fig. 2D), seems to point to the cause of some confusion. Our judgment is that Fig. 3B, Fig. 2D and Fig. 2F all show loop vents, and that where the loop vent is applied in a one-story build-

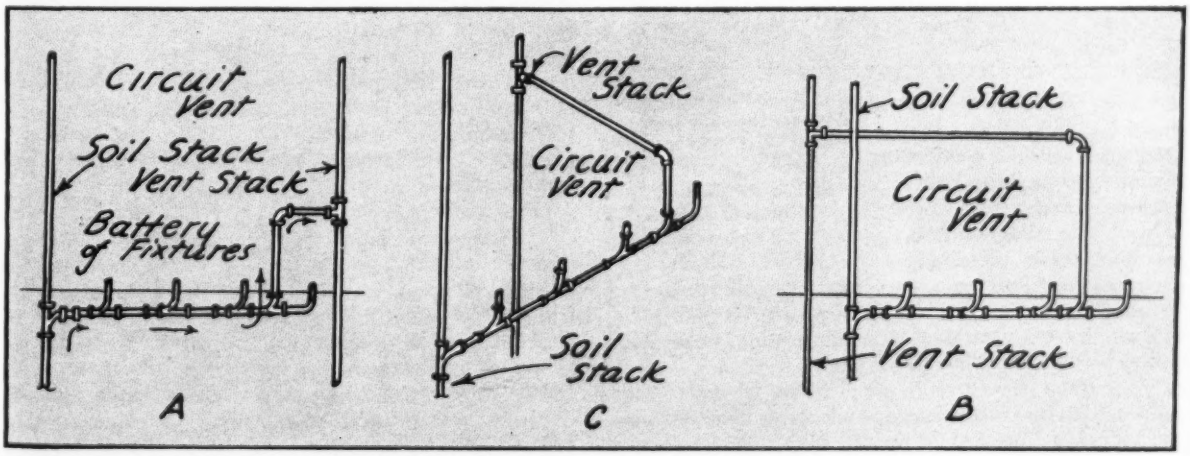


Fig. 3—The question asked here is that if the connections shown in A represent a circuit vent, what does C represent. Also, why isn't B a circuit vent

ing it would be much more economical to loop back into the same stack than to run a separate vent stack. However, it is entirely correct and probably in some cases more practical and more economical to loop vent each separate floor, rather than to use the circuit vent.

The question is asked as to what sort of a vent is shown in Fig. 3C, if Fig. 3A shows a circuit, and Fig. 3B a loop vent. The only difference between Figs. 3A and 3C is that in one case the vent stack is at the opposite end, and in the other case it is off at one side. Our judgment would be that inasmuch as the vent does not loop back over the line of fixtures in Fig. 3C, the vent is essentially a circuit vent.

IS FIG. 2E A LOOP VENT

A note attached to Fig. 2E claims that this is not a loop vent. We agree to this, and consider it a continuous vent. We also agree that circuit and loop vents apply not to single fixtures but to batteries of two or more fixtures.

A note attached to Fig. 2F states that it is not a loop vent "because it circulates air from one stack to another. Our judgment is that Fig. 2F shows a loop vent on each of two floors.

In the above letter the point is made, as we get it, that in circuit venting the air is circulated from one stack to another stack, whereas in loop venting the air for venting is taken from the same stack that carries the sewage. We have always held an entirely different thought, that, as already stated, the two kinds of vents were distinguished from each other solely through the relative locations of the two stacks.

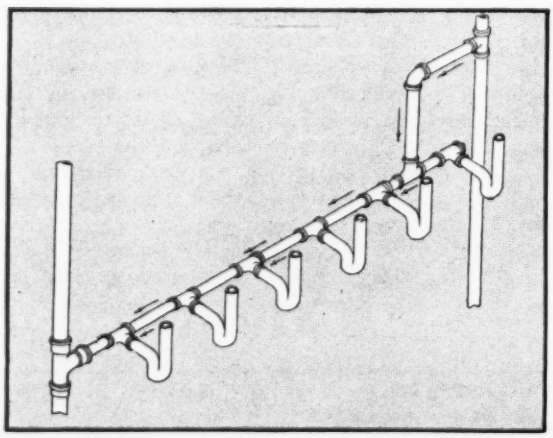


Fig. 4—Above is shown the conventional type of circuit vent. The arrows indicate how the air is supplied to protect the different traps

Now regarding the flow of air. The vent piping is installed solely to supply the air which prevents the siphonage of the traps. Whether in the circuit vent or the loop vent, there is opportunity for the entrance of air into the main horizontal waste or soil line from either direction.

Siphonage can occur only when the air in contact with the trap seal becomes exhausted and a vacuum or a partial vacuum is formed. When the circuit or loop vent is used, and the waste or soil is properly sized, and the individual waste connections are properly made, the danger of siphonage is overcome, through the travel of the air supply in the upper part of the line, this travel being in either direction. So long as air gets to the trap seal so that siphonage is prevented, it is not so important whether it comes from one direction or from another.

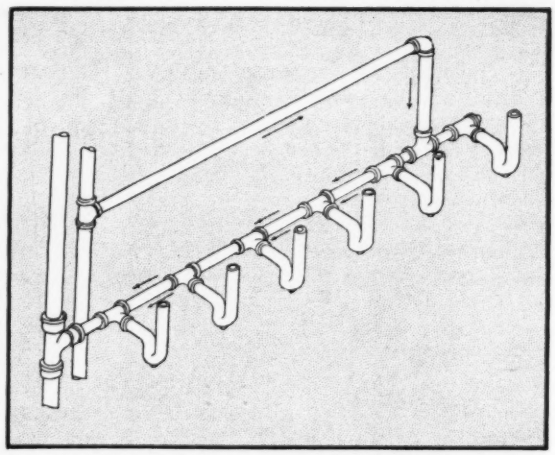


Fig. 5—This is a loop vent and obtains its classification because of the fact that the vent loops back over the soil line to connect into the vent stack

Big Welding Job

A $10,908,000 contract of the Babcock & Wilcox Co., 85 Liberty street, New York, calls for the fabrication and installation of the welded plate-steel outlet pipes for the hydraulic power and flood control tunnels at Hoover Dam. The contract involves such unusual features as the fabrication of the largest diameter pipes ever constructed, from plates about three inches thick, and the erection of a plant, built solely for the purpose, on the Federal Reservation near the Dam. The total length of the pipes to be constructed exceeds 12,000 ft. with variations in diameter from 8½ to 30 ft.

A complete fabricating plant will be built at the site of the work on account of the large diameter of the pipe sections, which cannot be transported over any of the existing railroad lines. Each section of 30 ft. pipe will require six steel plates of the largest size that can be rolled with existing steel mill equipment. Each plate, weighing about 25 tons, will measure approximately 12 x 35 ft., and two such plates are all that can be shipped from the steel mill to the fabricating plant on one railroad car. Three of these will make one piece of 30-ft. diameter pipe.

All sections of pipe will be tested in various ways, one of the tests being searching X-ray examinations of the welded seams. While the Babcock & Wilcox Co. has for some time employed X-ray apparatus for the purpose of determining the quality of welded joints, it is interesting to note that the quantity of X-ray film which will be used for this work will exceed the total of all X-ray films produced to date for industrial purposes.

Old Home Market Offers Best Outlet for Heating Sales . . . . . By A. R. HERSKE

ABOUT two years ago, a professor at one of the midwestern colleges was interested in studying stimulus and reaction, so he placed a frog in a pot of cold water to determine the reaction of the frog to the stimulus of applying hot water.

With this in mind he raised the temperature of the water about one degree every fifteen minutes and then closely watched the reaction of the frog. He was most surprised to find, when he had reached a temperature of about 96 degrees, the frog suddenly died.

Now just so, gentlemen, I wonder whether the slow transition which has taken place in our industry in merchandising is coming upon us so gradually that unless we take cognizance of it, we are apt to be totally engulfed and pass out as the hapless frog did.

RADIATORS USED FOR MODERNIZING

It is true that you have been told from time to time the things you ought to do. But just how graphically have these dimensions been brought to your attention? To begin with, there is a decline of 81 per cent in residential floor space from 1929 to 1932, but there is only a decline of 70 per cent in the total amount of radiation sold in that same period.. This then definitely indicates that we are selling radiation to other than the new construction field.

Likewise there has been a decline of 81 per cent in new construction as it affects lighting fixtures, while the decline in the total number of fixtures manufactured has been some 65 per cent, indicating that this other industry has also taken cognizance of the tremendous field in existing homes, which in turn accounts for the fact that their total business has not declined in proportion to the total construction figures.

A. R. Herske

Let us bring this matter home now more pointedly and let us do it in this way. In 1931, there were a total of 100,000 buildings built in 37 states as reported by the Dodge Corporation. In 1932 there is a decline of about 50 per cent in new building construction, which means that for this year there will be about 60,000 buildings built. If we take a round average of 1,000 jobbers, this means 60 jobs for you and a heating contractor in the United States for the whole year, which we will all agree is an insufficient basis for any satisfactory profit volume.

But let us look a little further than this and interpret this in the guise of a round figure of 30,000 contractors and we are brought up suddenly by the stark realization that this means just two new construction jobs for each plumbing and heating contractor in the United States.

Now it is all right for us to believe that business is going to get better and the sun is going to shine tomorrow, but according to the Dodge figures our population will reach a definite status quo point in about 1949, at which time the demands for housing for new population will have reached their maximum. Pending that period, and despite the accumulative housing requirements since the peak year 1926, we are frank to say that should new business entirely decline there is a sufficient volume in the old home market to adequately provide a profit, and an attractive one at that, to every aggressive contractor and jobber in the United States.

SHOW THEM—SELL THEM

We must realize that we have failed to go to the public to tell the story of heat as other industries have done, and we must of necessity realize that merchandising brains and intelligence in those other industries are looking with envious eyes upon the tremendous potential that exists in the heating and plumbing field. Unless we take cognizance of the market that awaits aggressive selling of the people living in their present homes, other industries and other merchandising media will take from us what we consider our rightful heritage and will prove to us that a feeling of complacency is tantamount to oblivion. We need but look at the remarkable strides made by radio, refrigerators, washing machines, etc. not in new homes, but in presently existing homes, to realize that the product which we manufacture can and will be sold to the public by those who will take it to the public; who will see them, tell them, show them and sell them.

It is needless to waste any great amount of words in pointing out that the success of the distributor and the contractor today is not in competition on the few new construction jobs, but in the creation of modernization installations in old homes. What we need frankly is less legislation and conversation and more execution, and I may only bring it to you by stating that talking about a thing is jawbone, wishing it could happen is wishbone, but going out and doing it is backbone. I am through.

Excerpts from an address by Mr. Herske, who is sales promotion manager of the American Radiator & Standard Sanitary Mfg. Corporation, at the October meeting of the Eastern Supply Association.

Start a "Spend for the Home" Campaign

Give Them Home Comfort

"SPEND for the Home" is the soundest advice of the day. It has its social bearings, too, since we are all of us living a little more in our homes and a great deal less elsewhere. Young people will entertain at home more this winter—and they want home arrangements to be in good taste. We suggest an examination of plumbing equipment in preparation for the winter social season.

(In this space Your Name, Etc.)

A single-column plumbing ad

My dear Madam:

During 1932 there was a slogan--"Spend for the Home in 1932"--popularized all over the country.

It's a good one, because it contains a sound piece of advice. Not only is it good economics to invest in home equipment at present prices, but there is the social angle as well. After all, we must admit that this winter we shall do rather more living at home than has been the custom in past years.

That being the case, we will naturally look over the home furnishings with a critical eye. We are interested, of course, in the plumbing arrangements, and in having you know the beautifully styled (and colored) fixtures which are now available.

It would be a pleasure to have you visit our display room; or we shall be glad to have someone call at your home and go over your plumbing fixtures with you, with a view to suggesting possible changes. It is not always necessary to make major changes. Sometimes a new toilet seat, a touch of color in shower curtains, a new medicine cabinet with a Venetian glass mirror--sometimes such changes in accessories will do much to tone up the bathroom.

If you will telephone, we'll be glad to make an appointment for your visit here, or our visit to your home.

Very truly yours,
HARRY BROWN

A plumbing sales letter

A SOCIAL CYCLE IS COMPLETED

"We have just completed a social cycle," says Harry Brown, local plumbing contractor. "Like business, social affairs run in periods. We've had our season of dining and dancing out, our season when the home was really a place to go to when we had been everywhere else.

"We've come back home—this winter we're going to seek our amusement in the home. And that means that we want our homes to be as pleasing as, let's say, our favorite restaurant. At least that. That's why I'm urging that we 'Spend for the Home'—on plumbing, if you please to please me—but spend for the home anyway—whatever the purchases may be. It's good, sound advice, and if followed generally will do much to contribute to a revival of business, which is greatly desired by all."

Hand this publicity item to your newspaper

The copy on these two pages is for the use of readers of DOMESTIC ENGINEERING—without charge. If you wish to use the illustrations, they are sold at $4.20 for twelve—three months' service.

If you are using any of this copy, send us samples. We like to keep in touch with what our readers are doing.

The New Idea
"Spend for the Home"

It's new; because for some years we've been doing a great deal of spending for other things. Now that the home is coming into its own again—now that we are beginning to realize that the ultimate charm and happiness in life has its roots in the home, it is time to consider its furnishings. On our part, we stand ready to add style and color to the plumbing furnishings—to a degree surprising to those not familiar with advances in this field. Come in and see our display.

(In this space Your Name, Etc.)

A single-column plumbing ad

SERVICE

My dear Madam:

You are familiar, of course, with the modern trend which has reclaimed the basement and made it, in thousands of homes, a recreation room for children and adults.

This has been made possible by the introduction of various forms of automatic heating, for every type of fuel, which has brought a hitherto unknown cleanliness to the basement, and a lack of drudgery to the home owner. But the greatest gain has been in reclaiming basement space for the use of the family.

When inclement weather is upon us, it is mighty handy to have a basement play room where the children may work off their surplus energy, without wear and tear on the furnishings of the living rooms. A basement play room--clean and warm, and in which they may feel perfect freedom in their play--is an institution for which many a mother has raised her voice in gratitude.

The further fact to be noted in this connection is this: Automatic heating makes such playrooms possible not only because of its cleanliness, but because of its economy. You will be interested in records of existing heating plants where automatic heating has cut the fuel bill to a surprising extent.

If you will telephone, we'll be glad to make an appointment to see you here at our store, or to visit you in our home at your convenience.

Very truly yours,
HARRY BROWN

A heating sales letter

And Now—to Spend for the Home

This is the latest word—and the sanest—in the use of the family income. What is spent for the home is invested in comfort and happiness—and if it takes the form of automatic heating arrangements, you'll find it in the interest of economy. Automatic heating with any fuel takes away the waste of hand-firing methods, assures constant, even heat, freedom from colds, and a substantial lessening in the amount paid for fuel. It will pay you to investigate.

(In this space, Your Name, Etc.)

For newspaper ad or blotter copy on heating

Note how the copy on each of these two pages dovetails. The ad copy, the sales letter, the publicity item—in each case they help each other. Use them in your efforts—and send us copies.

Get back of the "Spend for the Home" Idea

A PLAYROOM INSTEAD OF A WAILING WALL

"The average child finds confinement indoors during harsh weather terribly boring," says Harry Brown, local heating contractor. "If he's a normal child, and has to do his playing in the living rooms, sooner or later he plays the bull in the china shop, and his voice is raised in the land against a system of household economy that restricts his exuberant spirits.

"Such a child should have a playroom in the basement—made possible by clean, economical automatic heating —where his surplus energies may be harmlessly vented, and where he is free from the feeling of stiffness and formality which he must observe if he has to play in the living rooms of the house. And—let me whisper this—the mother will find a load off her mind, too."

A piece of heating publicity

Buy Winter Home Comforts

BUY not only heating cleanliness and economy—but with automatic heating buy back your basement for family use. Become numbered among those home owners whose basements have been reclaimed for recreation space—convenient playrooms for both child and adult, but particularly for the child when inclement weather keeps it indoors. Automatic heating means substantial reductions in fuel bills, because it brings scientific control and a minimum of fluctuations in temperature. We'll be glad to give you full particulars, without obligation.

(In this space Your Name, Etc.)

A single-column heating ad

OUR READERS TELL US

Mastapluma—The Hunter

To the Editor

With Apologies to Longfellow and "Hiawatha"

Then The-Makers, the great boasters,
They the cheerful story-tellers,
Builders all of plumbing fixtures,
Jugs and tubs and washing basins,
Erstwhile friends of dear old public,
Made a "bow" for Mastapluma;
Fashioned wholly from "Bologney,"
With their speech built several arrows,
Tipped with colored gloss enamel,
And the cord they built with trimmings.
Then they said to Mastapluma:
"Go, Son, far into the forest,
Where the Roe and Warbuck gather,
Kill for us a lot of Warbuck,
Kill for us all gyps with antlers!"
Forth into the forest straightway
All alone walked Mastapluma
Proudly spoke to all who listened,
Sang the Saga of The-Makers,
Helped his friends the greatest builders,
Helped them lay away the shekels.
And the public listened keenly,
Believed what Mastapluma shouted.
Then, he turned his thoughts to Warbuck
Hidden in Chicago's bushes,
Saw the eyes look from the thicket,
Saw two nostrils pointing windward,
And his heart within him fluttered.
Then, upon one knee arising,
Mastapluma aimed an arrow,
But the wary Warbuck started,
Stamped with all his hoofs together,
Beat it for the tallest timber,
Made it tough for Mastapluma,
Made his hunger more intensive.
Timid heart now journeyed homeward,
Meeting face to face The-Makers,
But returning empty handed,
Changed the tone of former friendship,
How they scold and chide severely.
Then conniving they deciding,
Shorten Mastapluma's arrow,
Cut his fodder to the marrow.
Yet, in kindness they would spare him,
Grant him pittance of a shilling,
Made him like it—truly speaking.
Counseled in the camps of Jobbers,
Who endorse The-Makers' action
Caring nought for Mastapluma,
Prospers like a relieved Farmer,
Cast away his hard earned trophies,
Lead him surely to starvation,
Roe and Warbuck must be conquered,
Mastapluma answers clearly,
Confidence passed from out the picture,
Gathers sympathy from others,
Truly councils with his brothers,
Voices protests loud and lasting,
Looks about for truer friendships,
Paces onward—Wins the battle.

LEWIS J. ERON, *President,*
Heating and Piping Contractors Wisconsin Association,
and of Hydro Thermal Club.
Wisconsin Rapids, Wis.

Manufacturers Must Help to Solve Selling Problem

To the Editor

One thing is sure, we can not any longer ignore the mail order and direct-to-you concerns; a cheaper form of distribution must be worked out, and the master plumber can not do it alone. Others have already worked out a cheaper method of doing business such as the direct-to-you, mail order, and alley plumber. I really think it is more a manufacturer's problem than a master plumber's problem, and that is my purpose in writing this letter.

(Signed) D. G. T.

Emergency Temperature Limiting Appliances for Protecting Domestic Boilers

To the Editor

On account of the present tendency towards the universal adoption of temperature control (rather than pressure control) for the prevention of domestic boiler explosions, some practical suggestions are offered, which will serve to reduce the needless expenditures now incurred through faulty installations.

During the past year several complaints were made about the cost of servicing fusible metal plugs. In every case it was caused by excessively hot water from the fire pot coil being delivered into the hot water outlet piping direct, rather than into the upper part of the boiler (say twelve inches from the top), as it should be.

Fire pot coils are apt to heat small quantities of water to dangerously high temperatures, and should be connected to the boiler direct, at least twelve inches from the top, so as to have the benefit of the large volume of water in the boiler to reduce its temperature, but yet raise the average temperature of the entire contents of the boiler, before being delivered to the various outlets through the faucets when opened. This is what makes a real storage system of water heating.

The control of the temperature of the water should be that of the total water in the range boiler for the reason that regardless of the temperature of the water delivered into the upper part of the boiler, the final object is to have a boiler full of hot water. Were it not

CONSTRUCTED OF COPPER AND BRONZE THROUGHOUT

Select the pump that suits the particular conditions . . . . Don't try to suit the conditions to a particular pump

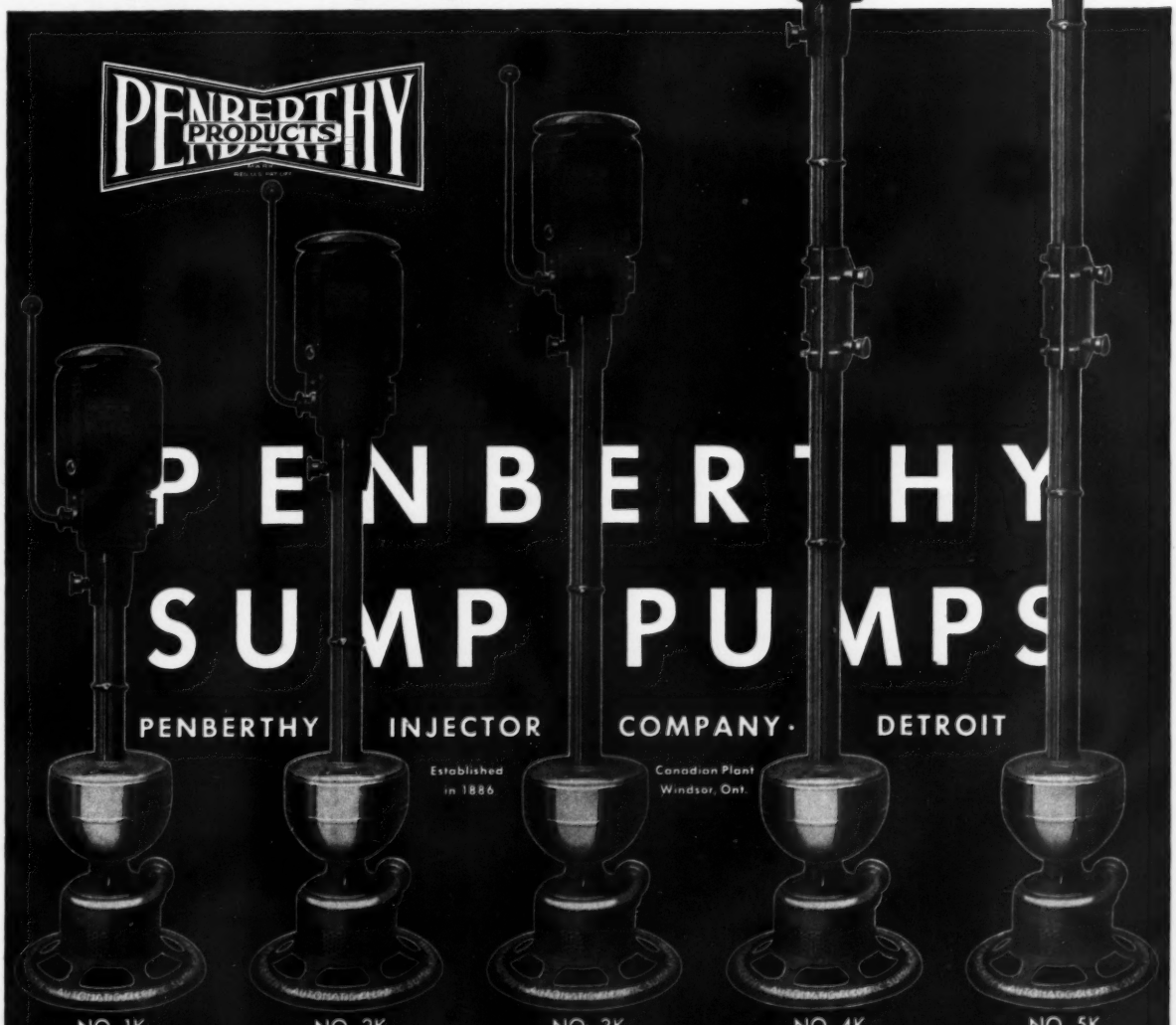
PENBERTHY PRODUCTS

PENBERTHY SUMP PUMPS

PENBERTHY INJECTOR COMPANY · DETROIT

Established in 1886

Canadian Plant Windsor, Ont.



NO. 1K	NO. 2K	NO. 3K	NO. 4K	NO. 5K
$65 LIST	$85 LIST	$100 LIST	$125 LIST	$150 LIST
Max. Sump Depth 2 ft.	Max. Sump Depth 3 ft.	Max. Sump Depth 4 ft	Max. Sump Depth 6½ ft.	Max. Sump Depth 8½ ft.

At your Service—

built for service

THE large line of Kennedy Products for the plumbing and heating industry is at your service—to help you give best service to your customers.

Kennedy Valves and Pipe Fittings include a type and size for all standard requirements and are obtainable from your local supply house. This factor of convenience is but one of many advantages of standardizing on Kennedy.

Another advantage is the assurance you will always have that all Kennedy products are well designed, conservatively rated and honestly built. You can conscientiously recommend them and use them with security.

Send for the Kennedy Catalog

Still another advantage of using Kennedy Valves and Pipe Fittings is their protection to your pocketbook. Not only are Kennedy Products reasonably priced but their use enables your pipe fitters to make up tight joints quickly and to save the time and cost of make-overs as well as eliminating future trouble jobs.

The Kennedy Valve Mfg. Co., Elmira, N. Y.

Warehouses: New York City, 128-132 White St.; Chicago, 1306-12 South Canal St.; San Francisco, 448-450 Tenth St.
Sales Offices: New York, Philadelphia, Cleveland, Atlanta, Chicago, Salt Lake City, El Paso, Seattle, Los Angeles and San Francisco

What contractors say about Kennedy Products

"Kennedy Fittings and Valves are perfectly satisfactory. I highly recommend them to other plumbers."

"I install nothing but Kennedy Valves, as I find them the best."

"Kennedy Fittings help us to do better work with less effort."

"I find Kennedy Fittings to be the best that can be gotten and always use them in all our work."

"I have used Kennedy Valves for 35 years and have had best service."

"Both in finish and threads we find Kennedy Fittings the best we ever looked into, say our employes. We agree with them."

"We have used Kennedy Fittings for some time and they have proved quite satisfactory. The tapping runs true both as to size and direction. They are light, yet strong, and stand more tightening than any other fittings we have ever tried."

"Have been using Kennedy Valves and Fittings for years, as they are always reliable and stay tight."

"I always insist on Kennedy Fittings as I find them perfect and easy to enter or connect with good tapping. Their machine work is all that can be desired."

KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

for the circulation caused by drawing the colder water from the bottom, heating it by the furnace coils and then discharging this heated water near the top of the boiler, we would have to depend on convection forces only. This is a slow process when compared with circulation, but both methods will eventually heat the entire contents of the boiler to the same temperature—this regardless of the impression which exists in the minds of many, that the temperature of the water in the boiler varies from top to bottom. It is purely a question of the time which the heated water remains in the boiler, and this again depends on the method of circulation used.

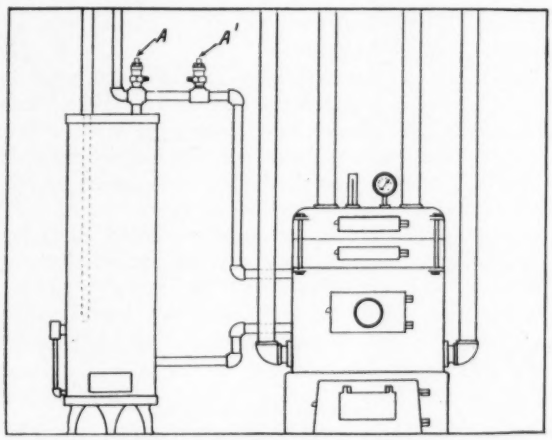


Fig. 1—Coil conected directly into hot water supply line, thus by-passing the storage tank. With emergency valves at points A and A', fuses are likely to blow every time the boiler is fired

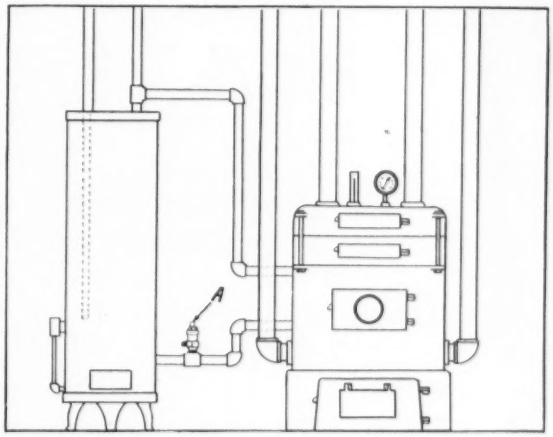


Fig. 2—Same conection as in Fig. 1 but showing author's recommended application of temperature emergency relief valve A which will operate only when water in the entire boiler is overheated

Of course, I fully realize that there are advocates of having a small amount of hot water available at all times at the upper part of the tank. This, however, is uncontrollable, as it depends entirely on the householder's requirements. It was undoubtedly due to having this very thought in mind that has caused in many cases the hot water delivery pipe from the fire pot coil to be connected to the hot water outlet just above the top of the boiler, so that when opening the faucets this hot water could be drawn direct (without entering the boiler). Then in case no hot water was being drawn it simply passed into the top of the boiler.

This method of connecting the furnace coil is absolutely wrong and has been the cause of premature melting of fusible metal temperature limiting appliances.

GUARD AGAINST OVERHEATED WATER

It must be fully understood that no fire pot coil can be considered an instantaneous heating element. It will, however, heat a small quantity of water to dangerously high temperatures, and if piped direct to the hot water outlet this excessively hot water often melts the fusible metal, even though the water in the boiler proper might be of normal temperature.

It should be fully appreciated that the boiler, being a large reservoir for heated water, offers ideal means in itself for preventing premature melting of the fusible metal with its resultant annoyance from unnecessary servicing.

Temperature limiting appliances should prevent dangerous temperatures of water within the boiler itself and not in the pipes. We are not concerned with the temperatures of a small quantity of water; what we want is absolute safety from boiler explosions.

All temperature limiting appliances are for emergency only; their prime function being to prevent dangerous temperatures, something which no type of pressure safety or relief valve can accomplish for the domestic boiler. The reason for this is that domestic boilers cannot be inspected internally, yet it is known that all steel boilers rust out and become weaker every year. If it were a steam boiler it would be inspected every year, the allowable operating pressure determined by the inspectors, and the safety valves set accordingly. This is why we have comparatively few steam boiler explosions. Contrast this with the domestic boiler, which cannot be inspected, and if it could the working pressure on the safety valves could not be lowered below that of the pressure in the water supply system.

BOILER AND VALVE PRESSURES

Steam boilers are fed by pumps and the pressures can be maintained to suit the operating conditions of the boilers; not so with domestic boilers, which are fed by a constant pressure and cannot be altered to suit individual homes.

Many domestic boilers have exploded and carried the safety valves along with the boiler; the reason for this being that the safety valve was set at a higher pressure than the boiler could stand, which is easily explained. Suppose the water pressure was 50 lb., the safety valve set at 75 lb., the boiler rusted out to such an extent that if a hydrostatic test were put on the boiler it would rupture at 60 lb. Now suppose steam of 60 lb. pressure

was generated in this boiler; it is obvious that the boiler would explode and the safety valve would go with it—this on account of the valve being set at 75 lb., or 15 lb. more than the boiler could stand.

Temperature control must be made mandatory in all states if we are to have that safety for our families and our homes, which we all cherish. With proper temperature control we can make all domestic boilers absolutely free from explosion, regardless of any and all opinions to the contrary, and it is the only absolute safe-

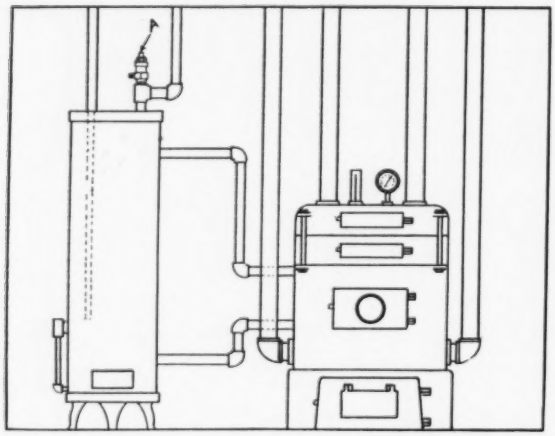


Fig. 3—Author's recommendation for connecting coil with storage tank and temperature relief valve A. If coil capacity is large compared with storage tank, then valve should be placed as in Fig. 2

guard possible to think of for protecting boilers which cannot be inspected.

With proper temperature limiting appliances applied to domestic boilers it is impossible to generate steam of a pressure corresponding to the water pressure in the service lines, provided we fix on some sane temperature limit; and without steam being generated we cannot have an explosion.

BOILER TEMPERATURE LIMITS

There has been too much talk about 210 deg. Fahr. being the limit for emergency temperature limiting appliances, when 240 deg. Fahr. is absolutely safe for any domestic boiler. The reason for this is obvious (See table of water pressures and the corresponding temperatures necessary before steam can be produced):

Gauge Pressures	Temperature of Steam
1 pound pressure	215 deg.
25 pounds pressure	266 deg.
30 pounds pressure	274 deg.
50 pounds pressure	297 deg.
75 pounds pressure	320 deg.
80 pounds pressure	323 deg.
100 pounds pressure	338 deg.

It will be noted that a temperature of 240 deg. Fahr. corresponds to 10 lb. gauge pressure. This pressure is so low that it would not give a proper water supply for the house, so we must resort to higher pressures.

With closed systems we must use pressure relief valves in addition to temperature limiting appliances, in order to prevent rupturing the boiler from the excessive pressures produced by expansion of the heated water. This requires a very small valve as the volume of water only increases 2½ per cent when heating from 60 to 160 deg. Fahr. It takes approximately one hour's time to heat the water to the above temperature, so that full relief is afforded by drops of water instead of a continuous flow.

It must be understood that a boiler can rupture from expansion stresses even though we have only 100 degrees temperature, so do not confuse a boiler rupturing from expansion with a boiler exploding, as a boiler can only explode from steam pressure.

When a boiler ruptures from excessive pressures due to expansion no fragments can fly, as often stated erroneously. The boiler simply opens up at its weakest point and lets the water run out. It has no expansive force such as steam, so the boiler never leaves its position, as it does when an explosion occurs.

The public should be seriously concerned about possible boiler explosions, and fully understand that they cannot have an explosion unless they generate steam.

Welding—

(Concluded from Page 44)

with this design are invariably made up of welded work.

You can therefore easily visualize from these abbreviated remarks that welding has become part and parcel of the progressive piping contractors regular practice for the simple reason that it is always on hand ready to meet any emergency.

Tools that were formerly discarded when they came back to our shop broken, are now repaired, renovated and restored by a process of welding. Those of us who are engaged in large ventilating operations, also use where possible welding in place of rivets, in fabricating our black iron duct and flue work.

Early last year when installing pipe at the Empire State Building, it was to our advantage to weld all piping from 6 in. to 24 in. This procedure was followed on the new Bankers Trust Building in the Wall Street zone, and at the present time we are welding all of the large steam supply mains and the piping used for water to and from the cooling towers for air conditioning on the large central building at the Rockefeller Center, known as Radio City.

When dictating this paper, I recalled a little incident that occurred in my early childhood many years ago. While on a visit to some relatives who lived in a little town called Amesbury in the State of Massachuetts, where the principal occupation of the people was the spinning of cotton and the building of carriages, for which the Town later had become famous, I remember distinctly how fascinating it was to watch the blacksmiths in the carriage shops weld the ends of flat iron bands together by means of anvil and forge into large round hoops and shrink them while still hot on the wooden carriage wheels with the help of a pail of water, never for a moment realizing that I was watching the early stages of a great industrial enterprise whose potential possibilities even at this day have only scratched the surface.

★

1300
IS THE
Lucky Number

•

THE 1300
Close Front Sprayed Finish Toilet Seat for regular sized bowl. Finished in white, orchid, yellow, canary, green, pink. Cast brass chrome plated Miller designed hinge.

Illustrating the Miller designed reinforcing plate hinge. Cast brass chrome plated. Adds years of life over ordinary hinge construction.

TO the holders of the 1300 go the winnings! In this case the winnings are profits, new business and an ever increasing reputation for sound judgment and service to your clientele, brought about by the outstanding value in the Miller Line of Toilet Seats, the 1300.

First announced in the early part of October, the new 1300 has had overwhelming acceptance everywhere. Housewives marveled at its beauty, its glistening snow-white finish, its simple modern lines. The man who pays the bill has been quick to acknowledge its construction, the especially designed Miller reinforcing plate hinge, cast brass chrome plated, making for additional years of service over ordinary hinge construction.

This manifestation of confidence in another of the Miller Line has been prompted also by the Miller policy of "most seat value per dollar." As in the case of all other seats in the Miller Line, this new Miller 1300 Seat incorporates everything that makes for long life and appearance at a price that has been immediately responsible for many seat sales.

Ask your jobber's salesman for the details. See one of the new Miller 1300's. And then profit with plumbing dealers everywhere who are familiar with the profits that go with Miller Toilet Seats.

CHAS. A. MILLER COMPANY
STURGIS : MICHIGAN

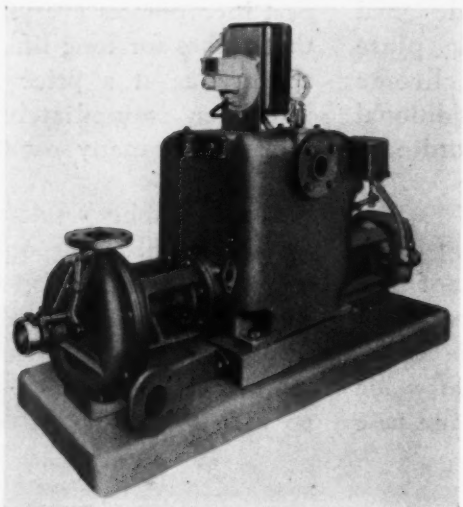
ITEMS FOR STORE, SHOP AND JOB

Readers will find in this department news of our industry's progress in the manufacture of equipment. You can read of the efforts of manufacturers to develop products which will increase customer demand, will make shop methods more efficient and will simplify installation.

Here is another selection of items which have just been brought out. Additional products which pertain essentially to automatic heat and air conditioning will be found in the Automatic Heat and Air Conditioning Dealer Section.

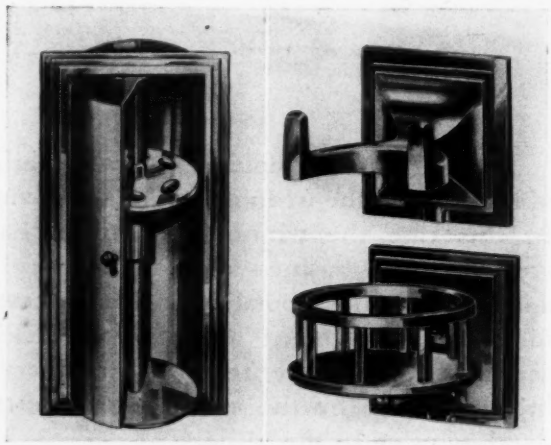
Vapor Turbine Heating Pump Announced

A recent announcement tells that the vapor turbine heating pump which is shown here has been placed on the market for return line heating without electric current. It is designed to operate directly from the system steam. Air and water are handled separately, the design providing for simultaneous capacities so that both air and water pumps will give their full volume at the same time. The space occupied by the unit also was given consideration and was reduced to a minimum. Normal operation is as a turbine unit. However, it is equipped with a complete electric-operated stand-by unit. The Nash Engineering Company, South Norwalk, Conn., is the manufacturer.



Line of Bathroom Accessories

There has been placed on the market, just recently, a line of bathroom accessories which have been designed to complete the bathroom ensemble by matching a line of bathroom fixtures. The accompanying group of illustrations shows, at the left, a tooth brush cabinet to be recessed in the wall; at the upper right, a set of hooks and at the lower right a drinking glass holder. The manufacturer is Standard Sanitary Mfg. Co., P. O. Box 1226, Pittsburgh, Pa.



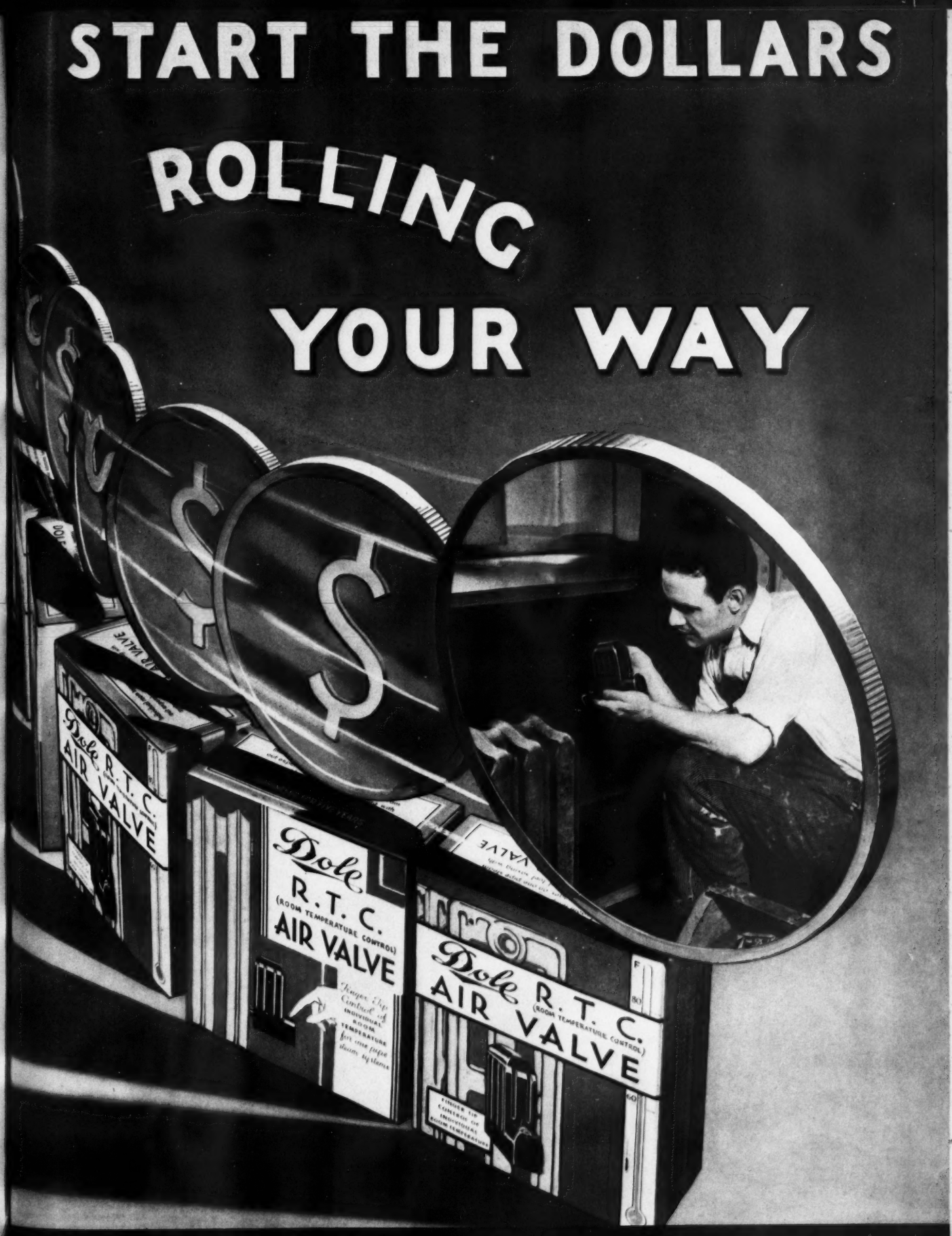
New-Finned Pipe Is Announced

There has been developed a method of applying a continuous copper or steel fin to galvanized iron, steel or copper pipe in ¾, 1 and 1¼-in. pipe sizes. Such pipe is particularly adapted to use in concealed radiation. It is also used in the refrigeration industry, in cold storage warehouses, ice cream plants and refrigerator trucks.

The following widths of fin are supplied: 1 in. with ¾-in. pipe, 1¼ in. with 1-in. pipe, and 1½ in. with 1¼-in. pipe. Varied fin spacings are available, ¼ in., 1/3 in., ½ in. and ¾ in. in copper fin, and in steel fin ½ in. and ¾ in. Pipe is supplied in lengths up to 20 ft.

The fins are wound on the pipe by stretching the outer

START THE DOLLARS ROLLING YOUR WAY



Install **DOLE R.T.C.** (Room Temperature Control) **AIR VALVES**

Install the Fast Selling Air Valve that Controls Room Temperature

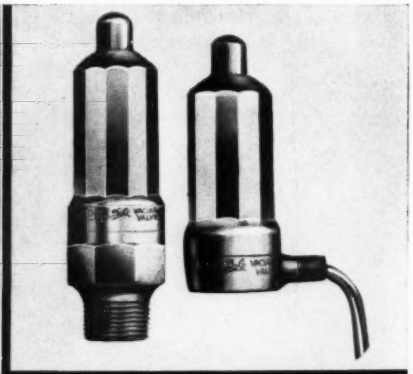
Dole
R. T. C.
(ROOM TEMPERATURE CONTROL)
AIR VALVE
Finger Tip Control of INDIVIDUAL ROOM TEMPERATURE for one pipe steam systems

THE ease with which lower priced articles sell today, against the big stock items, makes Dole Valves highly important to you. Three or four in each journeyman's kit will keep a sweet profit coming in. This can make all the difference between running in the red and ***jumping out of it.***

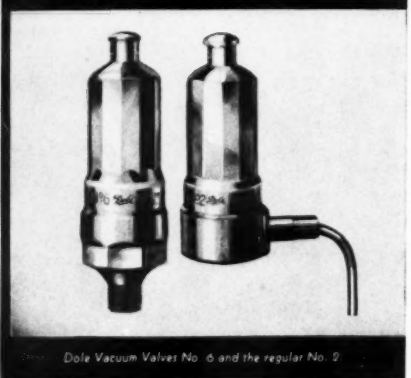
Pick them from the nine valves shown here—the most compact line for every air and vacuum valve need. (Jobbers especially will realize the economy of handling one short line, easily stocked, without duplication). Choose those which fit your local needs. The DOLE R. T. C. AIR VALVE comes first because it includes every feature an air valve should have—***plus control.*** Second only to this you will need Dole Vacuum Valves No. 2B. You can then laugh at the boys who say profits can't be made. Send the coupon.

THE DOLE VALVE COMPANY

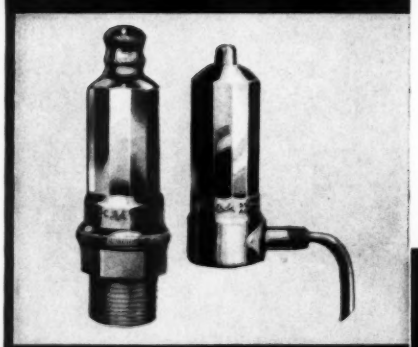
1913-33 Carroll Ave., Chicago, Ill.



Dole Vacuum Valves No. 6B and the regular No. 2B



Dole Vacuum Valves No. 6 and the regular No. 2



Dole Quick-Vent Air Valve No. 3C and the regular Dole Syphon Air Valve No. 1

Dole 1933 Straight Shank Air Valve and the regular Dole 1933 Air Valve

When we tell you every one pipe steam system with automatic firing is a juicy prospect you know your market. But the ***demand*** for comfort and for low heating costs is what makes the dollars roll—straight to your pants pocket. Hitch up your belt and hitch up with the real demand.

The DOLE R. T. C. AIR VALVE has taken the one pipe steam system and made it as modern as any—and as well equalized and economical. But more—far more: It has made individual room temperature control a reality!—at low cost! No wonder people want an air-valve that will boost the efficiency of old heating plants and at the same time make their homes, stores, and offices, more livable and pleasant.

Steamfitters and jobbers want their share of the rolling dollars which the DOLE R. T. C. AIR VALVE has put in motion. Take three or four and go to homes or stores where open windows are wasting the excess heat of a high head of steam—or where people are shivering around radiators far away from the boiler. Show the owners how DOLE R. T. C. AIR VALVES will equalize the system and cut the fuel bill one-fourth or a third.

Remember the DOLE R. T. C. AIR VALVE is specially efficient when used in connection with automatic firing.

Go to banks and real estate operators who have acquired buildings at low valuations. Show them how DOLE R. T. C. AIR VALVES can modernize the property at low cost—rent the apartments and keep them rented—sell buildings—all because of a new comfort and low operating cost.

It's easy to start the dollars rolling. First of all send the coupon for the facts.

DOLE VALVES

DOLE R.T.C. AIR VALVES

DOLE SYPHON AIR VALVES NO. 1

DOLE VACUUM VALVES NO. 2B

THE DOLE VALVE COMPANY, 1913 Carroll Ave., Chicago, Ill.

PRINTED IN U

Tell me the details, please, about the DOLE R.T.C. AIR VALVE (including prices.) My classification is ☐ Jobber, ☐ Steamfitter.

☐ Also, rush me the up-to-the-minute story on the regular Dole Syphon Air and Vacuum Valve Line.

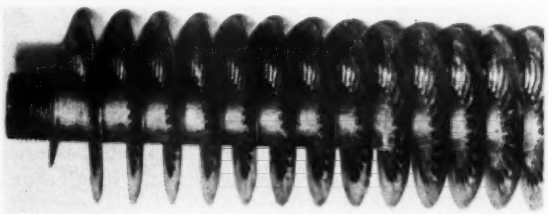
Name..... Firm Name.....

St. & No..... City..... State.....

portion of the ribbon. By this method the fin is applied to the pipe under high pressure to insure good metal-to-metal contact, made permanent by a further tinning or galvanizing operation. Greater lineal foot contact is obtained by the base of the fin being slightly corrugated and thicker than the outside edge. The copper fins are tinned, while steel fins are either tinned or galvanized as specified.

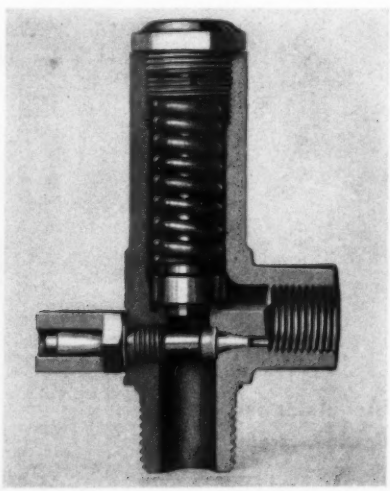
Laboratory tests of 1¼-in. plain galvanized pipe compared with 1¼-in. fin pipe, using 1½-in. copper fins, spaced ¾ in., showed 1 ft. of fin pipe to have the same capacity as 3 ft. of plain pipe. Changing the fin spacing to ½ in. increased the capacity of the fin pipe to four times that of the same length of plain pipe. A further change in fin spacing to ¼-in. increased the capacity to seven times that of the length of plain pipe.

McCord Radiator & Mfg. Co., Detroit, Mich., is the maker.

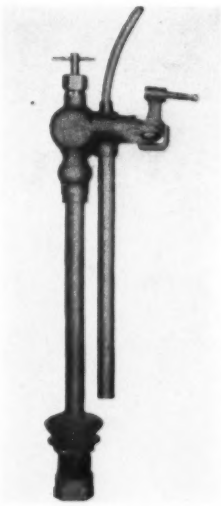


Pressure and Temperature Valve

This pressure and temperature valve has been placed on the market to safeguard against explosions due to excessive pressure. Unless otherwise requested, the



valve is set to relieve at 125 lb. pressure, opening and closing automatically at this point. The temperature portion of the valve is made entirely separate and is designed so as to interfere in no way with the pressure fitting. The fusible alloy melts at the boiling point in the boiler. An extra fusible plug is located in the outer end of the fuse holder so as to be readily available when replacement is necessary. J. W. Moore Valve Corp., at Everett, Mass., is the maker.

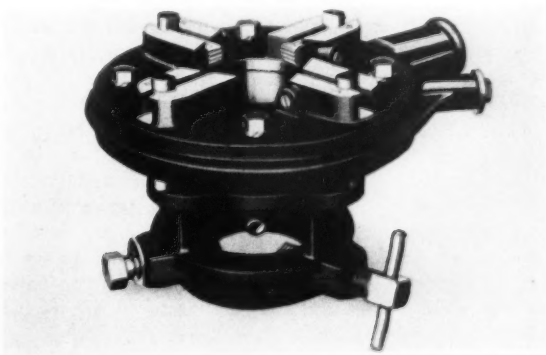


A Ball Cock with Roller Bearing

This recently marketed ball cock has been designed to include a roller bearing plunger action with the idea of eliminating any sticking of the valve. Another feature of this item is an independent shut-off valve located in the main stem so that in case of repairs, the shut off of the water can be made at the device. The stem of the shut-off valve is in the form of a spiral lead screw which provides an adjustment for quiet action depending upon the water pressure encountered. The valve seat of the ball cock is removable. The manufacturer is Northern Indiana Brass Company, located at Elkhart, Ind.

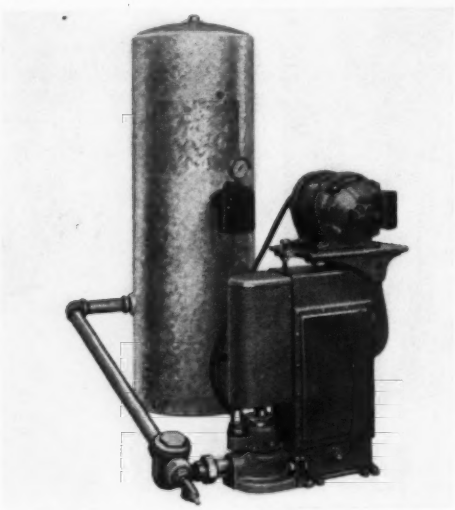
Pipe Threader With or Without Ratchet

The pipe threading equipment which is shown here is of the ratchet type. It has been placed on the market, available with one or two handles. A modification



of this is available without the ratchet. A separate set of dies is used for each size of pipe. The tool has been designed so as to place the pull directly on the die head immediately over the dies, the idea being to avoid cross-strain, wobbling, and cocking. The rear end is self-contained and has been designed to be accurate to 1/1000 of an inch. This rear end is made to center the pipe accurately and at the same time permit the cutting of drip threads or close nipples. The four upright posts have been made extra heavy. The pull is prevented from being placed on the posts so as to keep them from becoming loose. The dies are secured in posi-

tion by a die retaining device designed to be positive in its action. An additional feature makes it impossible to lose the dies out of the tool. However, the dies are arranged so as to be easily changed when desired, in the usual manner. The ratchet tool weighs 12¾ lb. and the plain tool weighs 9 lb. The Borden Company located at Warren, Ohio, is the manufacturer.

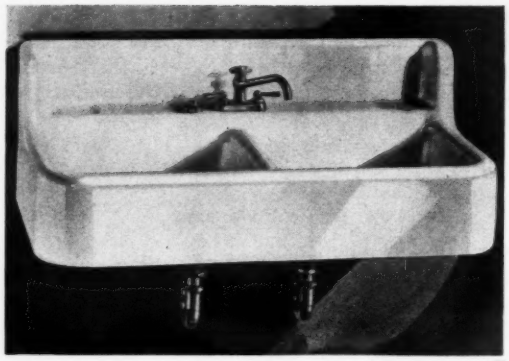


Deep Well Water Supply System

Announcement has just been made of there having been placed on the market a deep well pump which contains an improvement over an older piece of equipment. It is described as being lighter in weight, as fitting in smaller spaces, and as having higher efficiencies than previous models. Without the motor, it weighs 150 lb., and requires a floor space 16 by 18 in. in area and 21 in. high. The oiling system is low pressure and is designed to lubricate with only a cupful of oil in the crank case. The stuffing box is described as being dripless, and has eight rings of packing. The shaft drive has ball bearings. The well rod can be removed without moving the pump head or pipes. A flanged skirt has been designed to completely cover well casings up to 6 in. in diameter to prevent foreign matter from entering the well. The unit is manufactured by Goulds Pumps, Inc., Seneca Falls, New York.

Double Compartment Sink

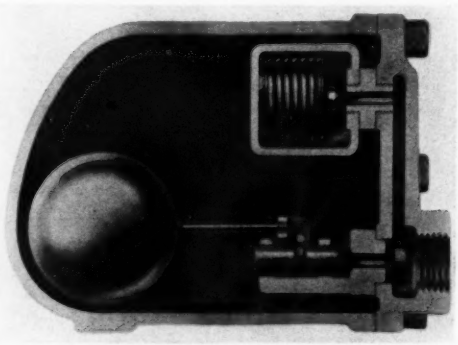
The sink shown here was placed on the market a short time ago as a compact ledge sink with double compartments and either right or left drainboards. It is 42 in. long and 22 in. wide with 8-in. deep compartments, either of which may be covered with a removable chromium plated metal drain board. The closed compartment is for the purpose of providing a place to soak dishes or to keep vegetables or fruits under cover and out of sight until needed. When both compartments are in use, the drainboard is designed to hang securely from the rim at



either side of the sink, out of the way. The three inch integral ledge at the back is for soaps, washing powder, brushes or tumblers. A spray hose for rinsing pulls out of the ledge when needed. The fixture is available in colors as well as white. The manufacturer is Kohler Co., Kohler, Wis.

A Float Trap with Thermostatic Air By-Pass

This trap has been placed on the market to be particularly adapted to risers, small mains and unit heaters. It is a float trap with a thermostatic air by-pass. The integral thermostatic air vent is inside the trap. All of the working parts are mounted on the cover and fully exposed for easy service, by removing the trap body. The inlet and outlet on the cover are 2⅝ in. apart, vertically, so designed to make the installation of horizontal piping easy where head room is limited. Sarco Co., Inc., 183 Madison Ave., New York City, is the manufacturer.



Pressure Regulator and Water Supply System

The pressure regulator switch which is shown here has just recently been placed on the market for use in connection with domestic water supply systems. It is designed with motor overload protection. Also, it is designed to be adjusted so as to operate the system at a maximum pressure of 65 lb. which provides a differential pressure adjustment setting of from 12 to 28 lb. It operates through a toggle mechanism to prevent major pulsations of pressure from being communicated to the

Here's a New CRANE closet *which brings* Hospital Hygiene *to* Homes

The new CRANE SIWELCLO *closet, C 10384*

If you could offer prospects a closet which would bring into their homes all the hygiene and the sanitation hospitals insist on, wouldn't that be of service in securing modernizing contracts? Well, here is that closet. It's the new 2-piece *Crane Siwelclo*. In it every detail is as modern, as serviceable as today's advance in the mechanics of design and in the knowledge of hygiene can make it.

Quiet action—The muffled rim supply overcomes objectionable flushing noises.

Hygienic—The dip in the center provides a very low bowl, 12¾ inches high. This permits a comfortable and correct posture and is recommended as helpful by the medical profession.

Sanitary—The decided dip in the rim also elevates the front and rear of the bowl opening, minimizing the possibility of soiling.

Raised Ledge—The raised ledge at the back upon which the tank rests does away with the unsanitary opening between the tank and bowl.

Adjustment—Roughs in 14 inches. Connection between tank and bowl is adjustable, allowing for a variation in roughing-in of ½ inch backward or forward. Tank and bowl are securely fastened together with four bolts.

Quality seat—The seat is white, sheet covered, with metal hinge, and designed to fit the curvature of the closet rim.

If you are bidding on any building or modernizing contracts, homes, hospitals, apartments, hotels or club suites, don't fail to suggest this new *Crane Siwelclo*. You can see it and get full details on it at your Crane branch.

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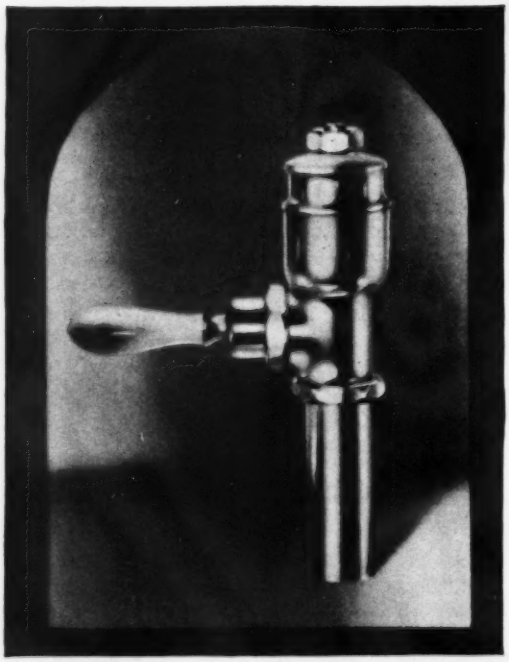
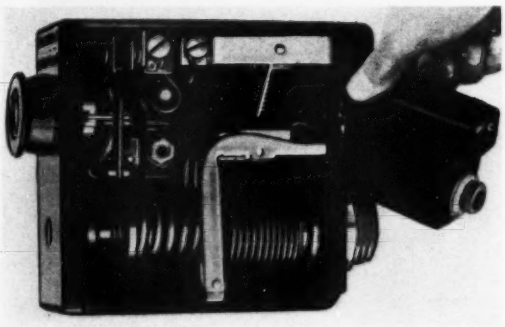
HOUSTON
BUSINESS SECTION



Prominent SLOAN Flush Valve Installations

1. Southern Pacific Bldg.
2. Travelers Hotel
3. First National Bank Bldg.
4. Public National Bank Bldg.
5. Rice Hotel
6. Chronicle Building
7. Auditorium Hotel
8. Great Southern Life Bldg.
9. Farmers' Market
10. City Auditorium
11. Munn's Store
12. Simon-Bloom Store
13. Stearling Bldg.
14. Gulf Building
15. Post-Dispatch Bldg.
16. Sam Houston Hotel
17. Cotton Exchange Bldg.
18. Petroleum Building
19. Wm. Penn Hotel
20. Ben Milam Hotel
21. Medical Arts Bldg.
22. Cotton Hotel
23. Electric Building
24. Texas State Hotel
25. Second National Bank
26. Levy's Store
27. Lamar Hotel Annex
28. Democratic Bldg.
29. Kirby Building
30. Lamar Hotel
31. Memorial Hospital
32. Humble Building
33. First Methodist Church
34. Touraine Hotel

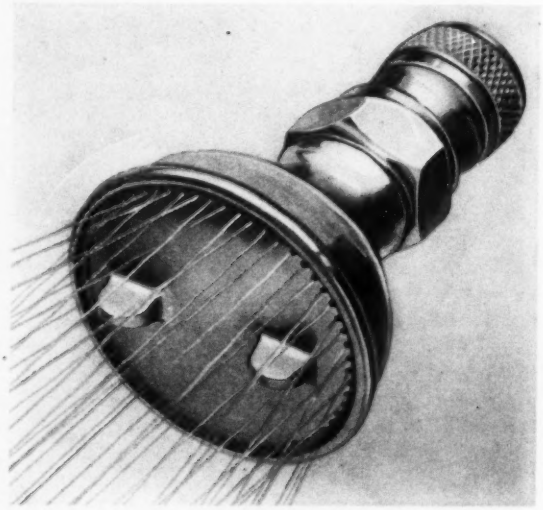
SLOAN VALVE CO ⁘ CHICAGO



contacts. A restricted orifice also is provided to prevent pump pulsations from reaching the switch mechanism. The switch is rated electrically for ¾ hp. on alternating current and ½ hp. on direct current. The case has a tight fitting sealed cover to keep out water or moisture. Cutler-Hammer, Inc., 12th and St. Paul Ave., Milwaukee, Wis., is the manufacturer.

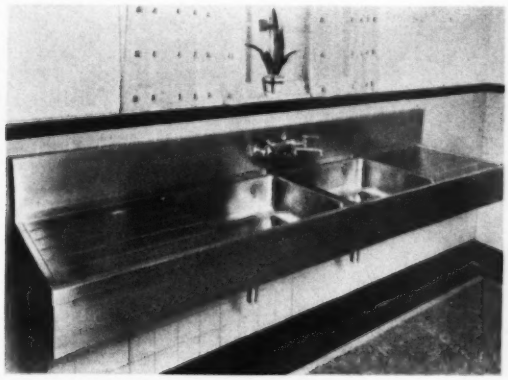
Spray Head for Showers

Here is a spray head recently placed on the market for the purpose of eliminating the stopping-up of the holes in the shower head. It is designed so that the adjustment will permit the shower to have either a flood or a needle spray. It is designed also to economize on water. The manufacturer is Speakman Co., Wilmington, Del.



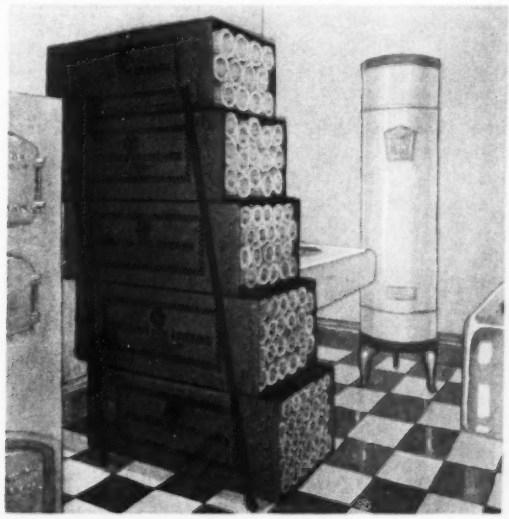
Monel Metal Sink with Double Bowl

The monel metal sink which is illustrated here has just recently been placed on the market as a standardized addition to a regular line of models already on the market. It will be noted that it has double drainboards as well as double bowls. It is 82 in. long and 21 in. wide. It is designed to be re-inforced with angular braces and straps to take care of strains without relying on legs or additional supporting walls. It is sound deadened and coated underneath with a special compound to seal and sound proof all surfaces. The International Nickel Company, Inc., 67 Wall St., New York City, is the maker.



Display Rack for Pipe Covering

Here is a rack for displaying pipe covering in show rooms. It has just been placed on the market. The device also is designed to serve as a dispensing rack and

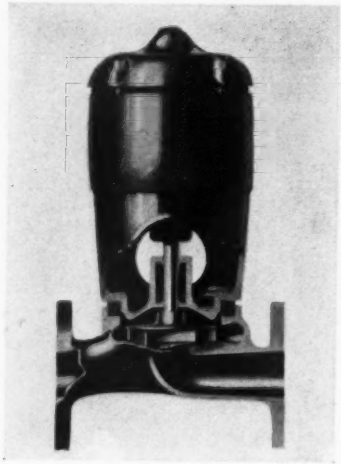


at the same time keep the stock of pipe covering clean and orderly. The manufacturer is Grant Wilson, Inc., 4101 West Taylor St., Chicago.

A Forced System for Hot Water Heating

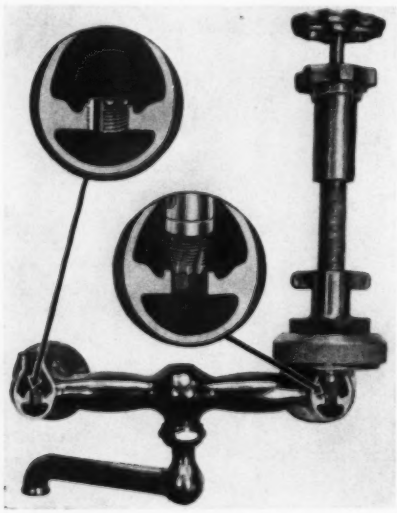
Another recently marketed item is a system of hot water heating of the forced type. It consists of the pump which is shown here and shunts which are placed in the main to regulate the direction of flow of the water. It is a one pipe system of hot water heating. The radiator and riser connections, both supply and return, are connected to the one main. A shunt is screwed into the tee at each one of these connections. In addition to being

applicable to homes, the system is described as being of use in connection with laundries, greenhouses, chemical processes, and the like. The maker is The Stevens-Root Company, 51 E. Grand Ave., Chicago, Ill.



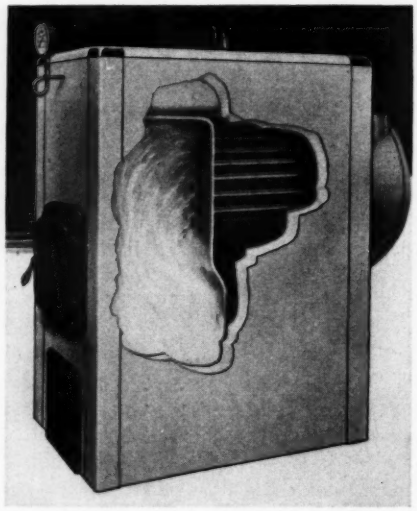
Tool for Reseating Faucets

Here is a tool which has been placed on the market just recently for regrinding or reseating worn faucets and valves. It is designed for reseating globe and angle valves with flat, tapered or raised seats, compression bibbs, ball cocks, faucets, gauge cocks and lubricators, without removing them from the line. The accompanying illustration shows the tool in position for reaming and tapping. The manufacturer is the Super Re-Seater Mfg. Co., 5005 Euclid Ave., Cleveland, Ohio.



Heating Boiler for Use With Oil Burners

There has just recently been placed on the market a house heating boiler designed for use with any proven oil burner especially of the gun or rotary types. Com-

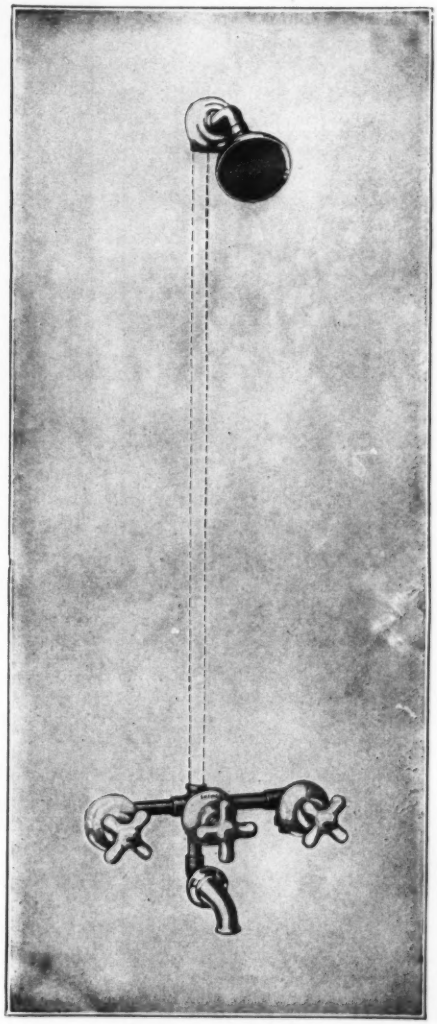


bustion control has been built into the boiler by means of an automatic draft regulator. Two types of domestic water heating coils are available for use with the boiler. One is for the generation of hot water without the use of a storage tank. The other is for use with such a tank. In both cases, the coils are located so as to be submerged in the boiler water. The boiler tubes may be cleaned either through the front door or through a full-sized door at the rear of the boiler. As will be noted from the accompanying illustration, the unit is jacketed. The manufacturer is Fitzgibbons Boiler Company, located at 570 Seventh Ave., New York City.

A Semi-Circular Wash-Fountain

The semi-circular washfountain which is shown here was placed on the market a few months ago as an improvement over an older line of fixtures. It has been designed to be lighter in weight. The mixer and spray-head has been made in one unit. There is a variety of color in the finishes available. The manufacturer is the Bradley Washfountain Co., 2203 Michigan St., Milwaukee, Wis.

★ ★



» » » JUST PLAIN GOOD!

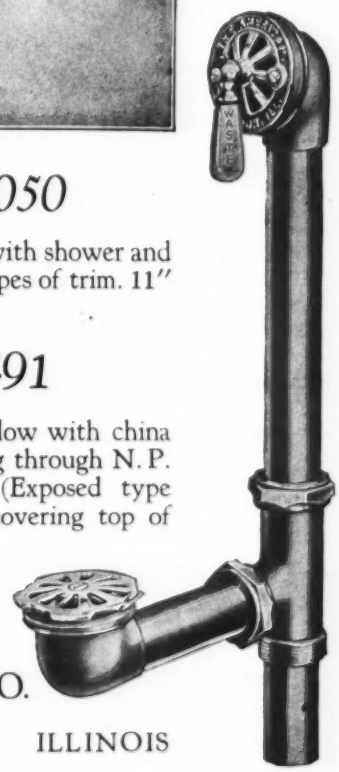
The American Line of Brass Goods can best be described as "just plain good." Ask your jobber about it.

No. 1050

Over-rim Tub Filler with shower and diverter valve. All types of trim. 11" centers.

No. 491

Lift waste and Overflow with china lever handle operating through N. P. overflow. Strainer. (Exposed type with canopy flange covering top of tee is No. 492.)

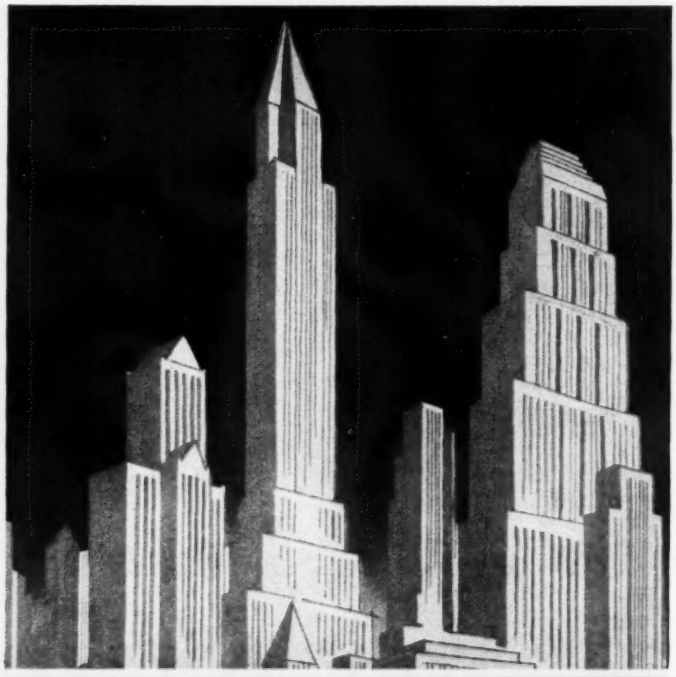


AMERICAN SANITARY MFG. CO.

ABINGDON ILLINOIS

5 REASONS WHY

All NATIONAL Galvanized Pipe is given a special chromate treatment to resist discoloration and the formation of white rust. This patented process preserves that smooth glistening surface or metallic luster characteristic of good galvanizing practice.



Scale Free Pipe is superior!

The scale which forms on all butt-weld pipe in the welding furnace is brittle. Advantage is taken of this fact in the manufacture of NATIONAL Pipe. Just after the pipe is welded, the scale, becoming brittle in cooling, is broken off by a special mechanical treatment. A smooth, clean surface results. This process was invented and developed by National Tube Company and is applied to NATIONAL Pipe (butt-weld sizes ½ to 3-inch). The advantages of this superior product are:

1. ***Minimized corrosion-particularly pitting.*** Mill-scale is one of the principal causes of pitting; therefore, when scale is removed, longer life is obtained from the pipe.
2. ***Clean, smooth surfaces, inside and outside***—forming a better base for platings, galvanizing, or other protective coatings.
3. ***Full delivery capacity***—less friction loss, because there are no obstructions to the flow.
4. ***No damage to valve seats; no clogging of small orifices***—because there is no scale in the pipe to break off.
5. ***Greater strength at the weld.*** The additional rolling this pipe receives in the Scale Free Process increases the strength at the weld approximately 20 per cent, making the pipe particularly desirable for bending and coiling.

For better and longer service, specify NATIONAL Scale Free Pipe.

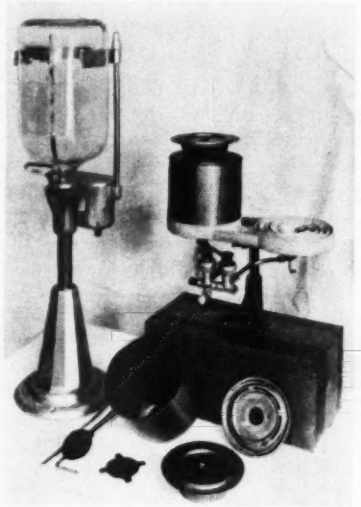
NATIONAL TUBE COMPANY • Pittsburgh, Pa.

Subsidiary of United States Steel Corporation

NATIONAL SCALE FREE PIPE
SPELLERIZED

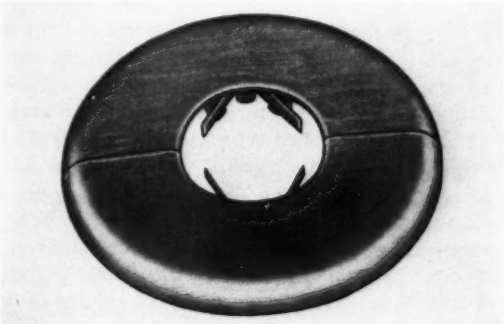
Oil Burner Unit for Ranges

Here is an oil burning unit which has been placed on the market for use in kitchen ranges. The flame intensity is controlled by the operation of a hand valve. The oil is supplied on what is described as the vacuum tank principle for the purpose of preventing a possible overflow. The manufacturer is Lynn Products Co., located at 17 Willow St., Lynn, Mass.



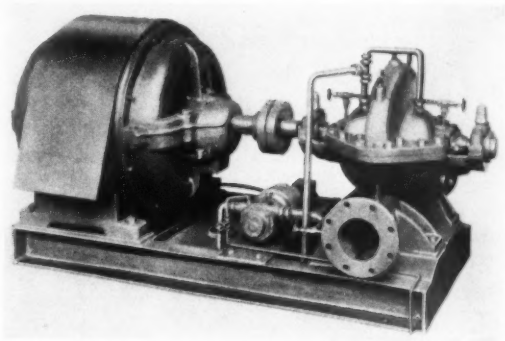
Floor and Ceiling Plate with Oak Finish

Here is a photograph of a floor and ceiling plate, the finish of which is grained natural oak. It has been designed to be inconspicuous by matching the surrounding woodwork. It was placed on the market a short time ago by The Beaton & Cadwell Mfg. Co., located at New Britain, Conn.

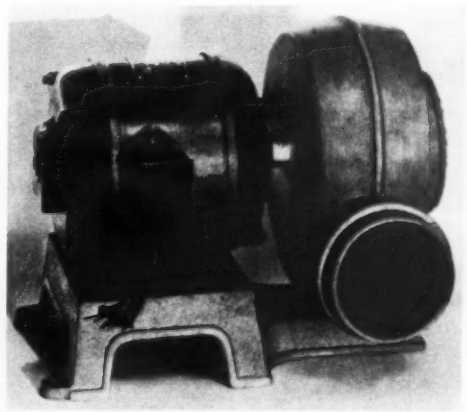


An Automatically Primed Centrifugal Pump

An improvement in an existing line of centrifugal pumps has been announced in the form of the unit shown here. It has been placed on the market just recently. The unit comprises an electrically driven ball bearing centrifugal pump, mounted with its motor on a fabricated steel bedplate, together with a priming unit of the wet vacuum type controlled by an electric pressure switch. The priming pump is connected to the so-called high spot of the suction volute by means of tubing and is sealed with clear water in a reservoir built into the bed plate of the complete unit. The priming pump operates to remove air from the centrifugal pump, thereby causing it to be primed. The priming pump motor is connected across the main pump motor



line at a point between the starting switch and the motor so that in starting the main motor, the priming pump motor also starts. The pressure switch is placed in the priming pump motor circuit and its pressure connection is piped to the discharge nozzle of the main pump. Worthington Pump & Machinery Corp., located at Worthington Ave. and Warren St., Harrison, New Jersey, is the manufacturer.



A Blower for Forced Draft

Here is equipment which has been marketed for use as an aid to or a substitute for natural draft. It is a blower which is applied to the ash pit of a heating plant. It is controlled by a thermostat or limit control. The manufacturer is General Blower Company, 2401 Chestnut Street, Philadelphia, Pa.

ANSWERED

QUESTIONS FROM OUR READERS AND ANSWERS BY OUR ENGINEERS

The Heating Value of a "Therm"

TO THE EDITOR:

I am in need of some information regarding the heating value of a "thermal heat unit" as compared with the heating value of a British thermal unit. Can you tell me where I can obtain such information?

Iowa. B. M. H.

TO THE READER:

We assume that in referring to a "thermal heat unit," you have in mind the "therm," which is used as a measurement of gas. We will therefore give you a definition of the word "therm."

A therm is a unit of heating value equivalent to 100,000 British thermal units (Btu.). The number of therms in a given volume of gas is determined by multiplying the given number of cubic feet of gas by the average total heating value of the gas in Btu. per cubic foot and dividing by 100;000.

How to Connect a Heater to a Hot Water Storage Tank

TO THE EDITOR:

Please comment on our method of connecting a heater and hot water storage tank when a circulating system is in use which we have illustrated in Fig. 1. You will observe that the hot water return pipe extends up to near the top of the tank; the water in this pipe becomes warm from the heat of the warm water in the tank, and expands, thereby causing circulation as long as there is hot water in the storage tank. You will note that no check valve is required as hot water will flow to the fixtures through either the supply or return lines.

Missouri. A. J. G.

TO THE READER:

Our correspondent has indicated a return connection which is rather unusual and we are not sure that we quite approve it. It is pleasing to note that he has been doing some thinking about this matter and has endeavored to improve the ordinary circulation connections which customarily are used. We agree with his statement that it permits doing away with the check valve ordinarily required but this is the sole recommendation in favor of this type of connection. On the other hand there are several objections and disadvantages to be considered. We wish our correspondent to understand that we are only commenting on this as it appears to us and, as it is a method of connecting with which the writer never has had any experience, it cannot be stated positively what would happen with a system so hooked up. What is thought is very likely to happen, will be described.

In the first place our correspondent says that the water in the tube extended up into the tank becomes heated

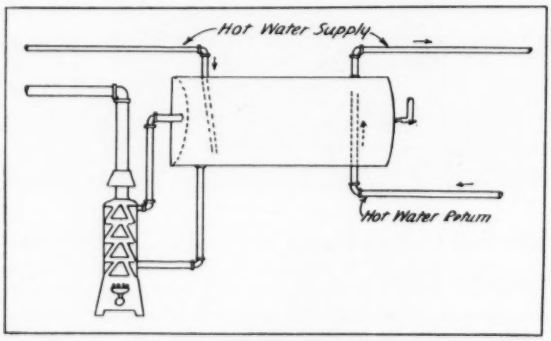


Fig. 1

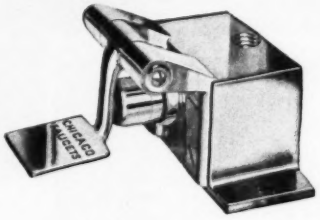
and expands thus causing circulation. In this we emphatically disagree with him as we believe that the temperature of the circulation water in any well designed system will be above that of the newly entered cold water lying in the bottom of the tank and—if this is so — the extension of the pipe into the tank would not only fail to assist the circulation but might even retard the circulation to a slight degree owing to the necessity of having to raise the cooled return water to a higher level before it could enter the tank.

The circulation in any hot water system is caused by the expansion of the heated water so that it is lighter than water in some other part of the system which has cooled to a lower temperature. The circulation head is the difference in weight between the hot column of water and the cooler column of water and in one foot of height is practically negligible as it takes 10 to 20 ft. to get enough circulation head to rotate the water with any reasonable velocity. Every plumber knows how difficult it is to circulate water on a basement ceiling for any distance unless there is a riser on the end of the line to pull the water around the circuit and, the higher this riser is, the better will be the circulation. For this reason we do not believe there is any advantage in our corre-

CHICAGO FAUCET NEWS

Issued Monthly by The Chicago Faucet Co., 2700-22 N. Crawford Ave., Chicago, Ill., Vol. 1, No. 2

NEW PEDAL VALVE A HIT!



SIMPLICITY OF DESIGN FIRST APPEAL

The new Chicago Faucet Pedal Valve gets favorable reaction instantly due to its simplicity of design. Of the five exposed surfaces, four are perfectly flat with internal threads. The fifth face, which is the front, contains the pedals and pedal supports (made of white metal) and the units.

VERY LITTLE FLOOR SPACE REQUIRED

The new Pedal Valve is very compact. Dimensions of base are $2\frac{3}{8}$ x $5\frac{3}{4}$ inches and total depth from extreme front of pedals to back of body is $6\frac{5}{16}$ inches. The entire fixture is *on* the floor with nothing imbedded *in* the floor. Packing is under spring pressure at all times, so no water will ever leak on to floor. With each valve are furnished both wood screws and expansion bolts with lead anchors for either wood or composition floors.

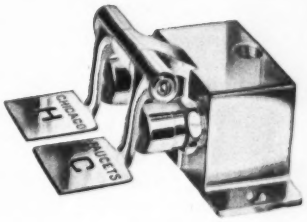
SIMPLE UNITS REMOVE FROM FRONT

All wearing parts of this new valve are embodied in a working unit which is removable from the front of the valve. Monel Metal seat and rubber seat washer, as used in other Chicago Faucets, are about the only

wearing parts of the unit and there is no wear on the body itself. Pedals tip up and stay up for re-washering of units and for cleaning under the units.

NEW VALVE TAPS GREAT REPLACEMENT MARKET

Not only is the new Chicago Faucet Pedal Valve a great fixture for new work, but it taps a market for replacements where much dissatisfaction with existing equipment is to be found. Doctors and dentists, hospital personnel and others who use pedal valves are usually found complaining or, at best, suffering in silence. Surveys indicate that they



are very receptive to this article which promises relief from their troubles.

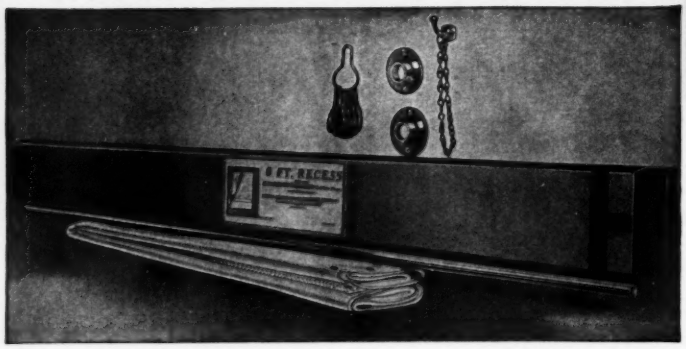
NEW LITERATURE NOW AVAILABLE FOR CIRCULARIZING

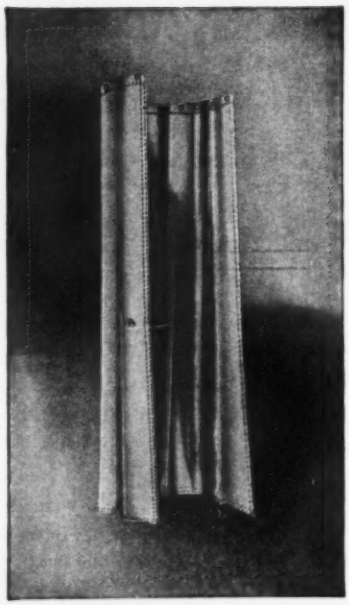
An attractive 6-page folder of envelope enclosure size has been prepared for plumbers who wish to go after this business. While the field is limited, as compared with that of sink fixtures, for example, most plumbers can use a moderate quantity of this literature which is available on request. Plumbers who realize that they must seek, or even create, their market these days, are sure to recognize the possibilities of new equipment, such as this, and go out after the business.

MANUFACTURER OFFERS FREE WORLD'S FAIR BOOKLET

Thinking that many readers of this page will be interested in learning more about "A Century of Progress" to be held in Chicago from June 1 to November 1, 1933, The Chicago Faucet Company has made arrangements to mail without charge to any master plumber who will request it on his letterhead, a 32-page booklet of pictures of the Fair. A limited supply of these booklets has been purchased, and requests will be filled in the order received. To be sure of a copy, readers should write at once.

WISECO PRODUCTS





"WISECO" Shower Curtain Combination

STRAIGHT, CORNER OR "U" TYPE RODS
WISECO QUALITY CURTAINS
CAST OR WROT FLANGES
PINS AND HOLDBACKS

Nickel Plated or Chromium

Complete in One Package

A great convenience and time saver for both the plumber and the jobber

"INSIST ON IT"—See our Catalog "E" for full details

J. B. WISE, INC.

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spondent's scheme as far as purely circulation is concerned.

But he does say that he can eliminate the check valve and when this is done there is less obstruction to the circulation so that the removal of the check would be an advantage, if no objectionable results followed. But against this is the fact that checks with the flapper hanging almost vertically are on the market and are designed expressly for the purpose of offering as little resistance to the circulation as possible. Another method is to install an ordinary check valve on a 45 deg. angle so that the flapper hangs absolutely vertically yet the slightest pressure against the tongue will cause it to swing far enough off the seat to let the water through. Any tendency to flow back through the check results in throwing the tongue tight against the seat and holding it there until the reverse tendency is no longer present.

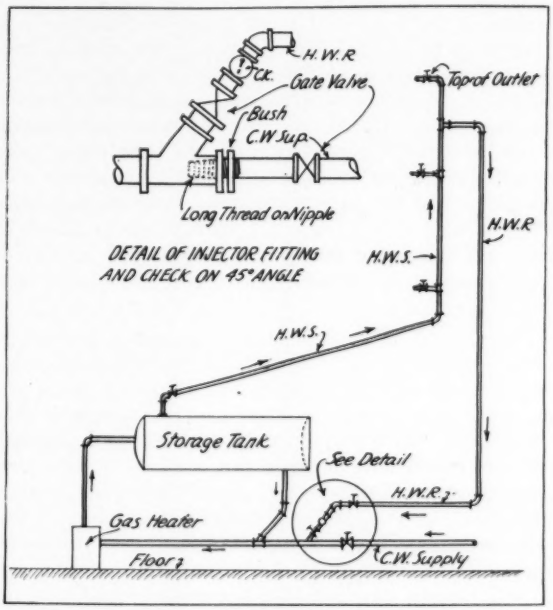


Fig. 2

We are wondering what our readers will think of the feeding of hot water to faucets through the return line as well as through the supply which, of course, will happen if there is no check placed in the return and there is nothing to prevent a reverse flow whenever a faucet is opened. While it might not be a serious matter on a small system, it seems to us that in a large system with a considerable amount of water lying in the return that it might require a considerable wait before real hot water from the tank could be secured. If this does occur, nearly all the advantage of the circulating system is lost, as the entire idea of circulation is to have hot water immediately available when a faucet is opened without having to draw out water way back to the tank.

We would suggest to our correspondent the connections shown in Fig. 2 where the cold water is used with an injector action to assist the circulation and a check valve installed on a 45 deg. angle offers little if any impediment to the flow.

About the Testing of New Heating Systems in Summer Weather

TO THE EDITOR:

In this locality we experience a minimum winter temperature of about 30 deg. Fahr., and it is customary for heating contractors to guarantee their installations for an inside temperature of 70 deg. Fahr. when the outside temperature is 30 deg. Fahr. and a steam pressure of 2 lb. gauge. We recently were required to make a temperature test on a system to demonstrate that we would be able to comply with our guarantee in 30 deg. Fahr. weather and the conditions surrounding the test were as follows:

Outside Temperature at Start.....68 deg. Fahr.
Room Temperature at Start.....70 deg. Fahr.
Outside Temperature at Finish.....72 deg. Fahr.
Room Temperature at Finish.....96 deg. Fahr.
Duration of Test.....3 hrs.
Steam Pressure on Boiler.....2 lb.

What we would like to know is whether our system has sufficient radiation to hold 70 deg. Fahr. with an outside of 30 deg. Fahr. and how this can be computed or determined.

California. R. B.

TO THE READER:

Our correspondent is up against a proposition which every heating contractor has to face sometime sooner or later which is that of convincing a purchaser that there is a sufficiently adequate heating system installed when the outside weather conditions are such that an actual test is impossible. Being aware of this difficulty we published in the October 18th, 1930, issue a complete discussion of this matter by H. T. Hall, with which were presented some 14 charts showing resultant conditions for systems figured from —30, —20, —10, 0, 10, 20 and 30 deg. Fahr. to 70 deg. Fahr. and with curves indicat-

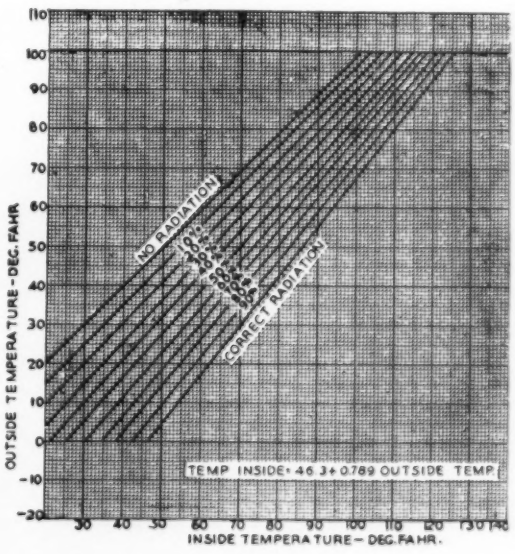

OUTSIDE TEMPERATURE - DEG. FAHR.
INSIDE TEMPERATURE - DEG. FAHR.
NO RADIATION
CORRECT RADIATION
TEMP INSIDE = 46.3 + 0.789 OUTSIDE TEMP

Fig. 1—Steam radiation basic + 30 deg.

ing what percentage of the required amount of radiation actually was installed, if the room temperatures did not come up to the required amount. These were prepared for both steam and water heating and, if by any chance, our correspondent has failed to keep his back copies we are presenting the two charts in which he is particularly interested again at this time, Fig. 1 being for steam with a base temperature of 30 deg. Fahr., and Fig. 2 being for hot water under the same conditions.

These charts were compiled from the formula

$$\frac{RT-IT}{IT-OT} \text{ equals } \frac{RT-it}{it-ot}$$

when

RT is the radiator temperature,

IT is the room temperature for which the system was designed,

OT is minimum outside temperature for which system was designed,

it is actual room temperature obtained during test,

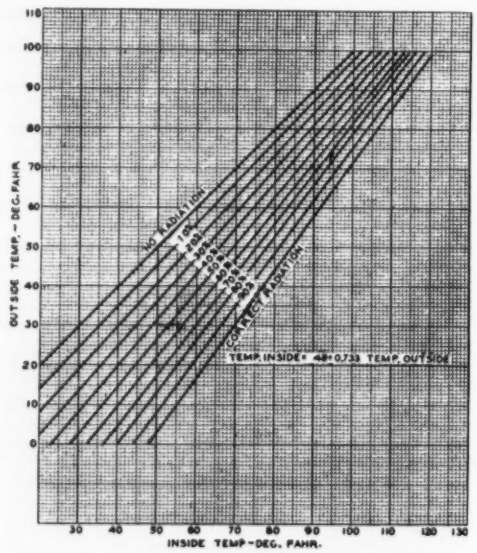


Fig. 2—Hot water radiation basic + 30 deg.

ot is the outside temperature existing during test.

RT equals 220 deg. Fahr. (approx. steam temp. at 2 lb. gauge).

IT equals 70 deg. Fahr.

OT equals 30 deg. Fahr.

it equals 96 deg. Fahr.

ot equals 72 deg. Fahr.

Let the equation now be set down using "it" instead of 96 deg. Fahr. and let "it" be computed to find out what it ought to be. This gives

$$\frac{220-70}{70-30} \text{ equals } \frac{220-it}{it-70}$$

or

$$\frac{150}{40} \text{ equals } \frac{220-it}{it-70}$$

or

3.75 it — 262.5 equals 220 — it

or

4.75 it equals 482.5

and

"it" equals 101.58 Room Temperature.

It will be seen that this checks exactly with the temperature which is shown to be required on the chart and would indicate—if the room temperature could not be made to exceed this point—that only about 85 per cent of the required amount of radiation has been installed. This also is obtainable from the chart by finding the point of intersection of the lines for 70 deg. Fahr. outside and 97 deg. Fahr. inside which falls about midway between the diagonal lines for 80 per cent and 90 per cent indicating approximately 85 per cent of the required radiation would give this resultant room temperature.

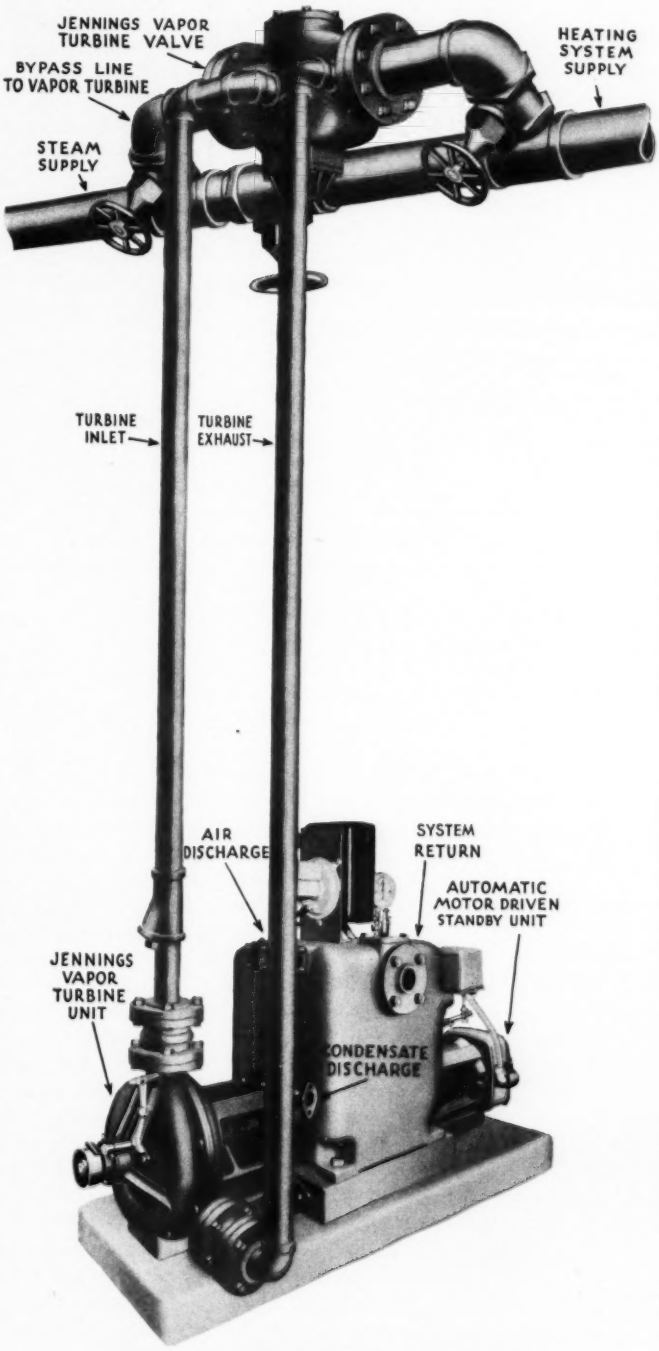
Our correspondent does not necessarily have to be discouraged over this result as it is quite possible that by continuing the test for a longer time the room could be brought up to the 104 deg. Fahr. required and all temperature guarantees are based on *continuous* operation and not on three hours time after turning the steam on. Another factor that should receive some consideration is the amount of wind movement as it is often more difficult to heat in windy weather than in colder still weather. The ordinary temperature guarantee is supposed to take care of a wind velocity up to about 15 miles per hour, but every mile above this velocity is taken as adding an equivalent to 1 deg. Fahr. lower outside temperature.

Thus if the wind had an average movement of 20 miles per hour on the day our correspondent made his test, this 20—15 or 5 miles in excess of what the guarantee is presumed to cover and the system is then allowed to credit 5 deg. Fahr. to the difference obtained, and this would have brought the equivalent room temperature up to 97 deg. Fahr. plus 5 deg. Fahr. or 102 deg. Fahr., which practically meets the guarantee. The fact also arises that in a new building it is frequently impossible to meet the full temperature guarantee for several months after the heat is turned on and kept on. This is for the reason that the construction materials—especially the plaster and masonry work—are so damp that a large part of the heat goes to evaporate the water out of these materials and does not show up on the thermometer until the building has been thoroughly dried out. It is our opinion that if this is a new building our correspondent's system is fully adequate to meet his guarantee as soon as the structure is thoroughly dried out and the system is put on continuous operation.

If a room is heated with hot water at a temperature of 180 deg. Fahr. and the room is at a temperature of 70 deg. Fahr. in one case and 85 deg. Fahr in another, the error resulting from the use of the approximate method as compared with the accurate method is less than 3 per cent. Similarly, if the size of a radiator is reduced by 50 per cent, the number of selections might be changed from say, ten to five; the error resulting from calculating the heat dissipation of these two radiators according to the same unit value would be about 5 per cent. These errors are so small when compared with the variations in the outdoor temperature that they may be neglected.

THE NEW JENNINGS HEATING PUMP

THAT OPERATES DIRECTLY FROM THE SYSTEM STEAM.



Here is a return line heating pump meeting the modern demand. The Jennings Vapor Turbine requires no electric current. It operates on steam directly from the heating mains, and returns that steam to the heating system with practically no heat loss. Electric current, the one biggest item in the cost of operating a return line heating pump has been eliminated.

This pump operates on any form of return line heating system, regardless of type of control on the steam supply. It functions equally well on low pressure steam, on high pressure steam thru reducing valve, or on street steam. It makes no difference whether the system is run above or below atmospheric pressure, because the turbine operates on the differential between the supply and the inlet, and not on a pressure above atmosphere.

Sturdy and simple in construction, this pump has all of the advantages that have made Jennings Heating Pumps a "buy" word to American Engineers. They have the exclusive Jennings feature of separation under vacuum, air and water being handled separately in pumping elements designed for each. Balanced bronze rotors rotate on high grade ball bearings without metallic contact with the casing.

Send to-day for Bulletin 203 describing this remarkable pump in detail.

NASH ENGINEERING CO.
SOUTH NORWALK, CONN., U. S. A.

Jennings Pumps

Can You Answer These Questions?

A Questions and Its Answer

The following question was asked in the October issue, and the following answer is by a reader:

In the case of a house with a one-pipe gravity steam system and a garage 30 ft. away, it is desired to place a radiator in the garage fed from the steam in the house. If the grade line between the house and the garage is only 3 in. above the boiler water line how would you proceed to do this?

THIS question is one which frequently is encountered in actual practice and there are three solutions two of which usually are objectionable. In the first place a supply line can be carried overhead with a wet return brought back under grade but the unsightliness and

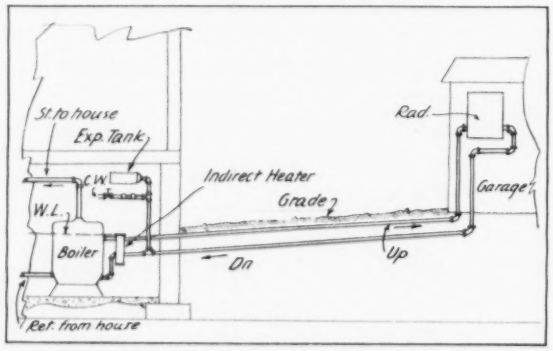


Fig. 1

nuisance of an overhead line generally makes this solution out of the question. The second method consists of installing an indirect hot water heater on the side of the boiler and taking a hot water supply and return line over to a hot water radiator located in the garage both

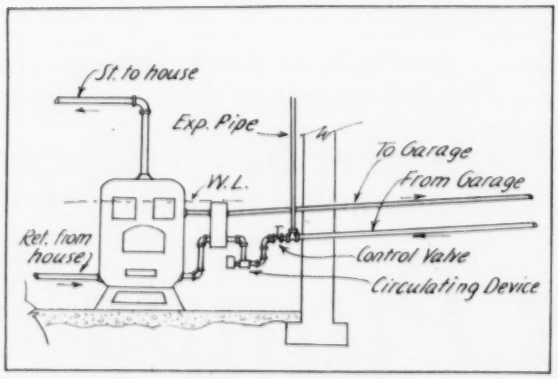


Fig. 2

lines being graded slightly up from the boiler toward the garage as shown in Fig. 1.

A small expansion tank or tank-in-the-basement must be used on the hot water side of the system and an air valve must be placed on the radiator for the elimination of air collecting in the top of the radiator. It also is advisable to place the radiator as high as possible in the garage in order to circulate the system and where this cannot be done the use of a small circulator may be necessary on the return near the boiler, as indicated in Fig. 2. In this case a control valve should be placed on

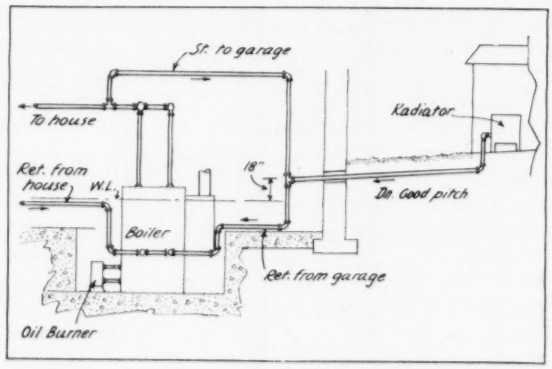


Fig. 3

the return to control the amount of water circulated by the circulator.

Still another method which is much more expensive and rather radical in conception is that of building a boiler pit in the house and deliberately lowering the boiler until the water line comes at least 18 in. to 24 in. below grade, under which conditions the garage system may be made into a one-pipe steam system the same as the house and fed off of the house system in the same manner as the other radiators. The objection to this scheme is the expense and trouble of installing the boiler pit and the inconvenience of coaling the fire and removing the ashes from a pit nearly 2 ft. below the general cellar level. Of course, if an oil burner is installed, or if the boiler is gas fired, many of the objections to pitting the boiler are removed and in these cases the simplicity obtained is worth, perhaps, all of the expense involved. A typical layout of an installation with a pitted boiler is shown in Fig. 3, and it will be noted that in such an installation the garage radiator can be placed on the floor.

How Would You Answer This Question

Should a horizontal vent line be run so as to pitch down toward the vent stack or up towards the vent stack? Why?

Answers based upon your experience, suitable, will be paid for and published in the February issue.

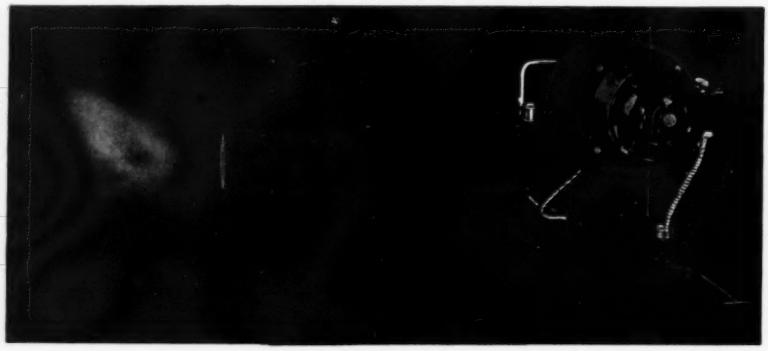
DOMESTIC ENGINEERING

Automatic Heat *and* Air Conditioning Dealer Section

Selling stokers on a performance basis . . . Putting over a new piece of air conditioning equipment with a bang . . . The oil burner dealer and his opportunity in air conditioning . . . The heating survey as a sales guide.

. . . . . The following pages contain this highly practical fund of information, as a part of the comprehensive job we are doing to keep our readers posted on what is being done, and what can be done, to tap this promising market where automatic heating and air conditioning set a new high standard of home comfort.

LICENSED UNDER THE ZORO PATENT ESTATE



SILENT GLOW MODEL 1000 GUARANTEES YEAR AFTER YEAR PROFITS

Look over the entire field of oil burners and you will find none adapted for so many installations and so readily salable as Silent Glow Model 1000.

Equally important, the fact that Silent Glow Model 1000 is licensed under the Zoro Patent Estate is an assurance that you are building a *permanently* profitable business.

It means, first, that the unit incorporates the outstanding improvements made in oil burner design over a long period of time. Second, there is no danger that the burner will some day be forced off the market because of patent litigation, leaving you with years of work destroyed and "orphan" burners to service.

Remarkably compact and free from adjustment gadgets—available in a variety of colors—and quality built down to the last bolt and screw—Model 1000 provides troubleproof heating at the lowest possible cost. Designed to heat 1000 square feet of steam or its equivalent.

Remember these points, too. More Silent Glow burners were sold in 1931 than any other one make. Silent Glow has the most complete line of oil burners on the market; a burner for every need. All completely protected by patents. Why not write today for particulars on the Silent Glow proposition?

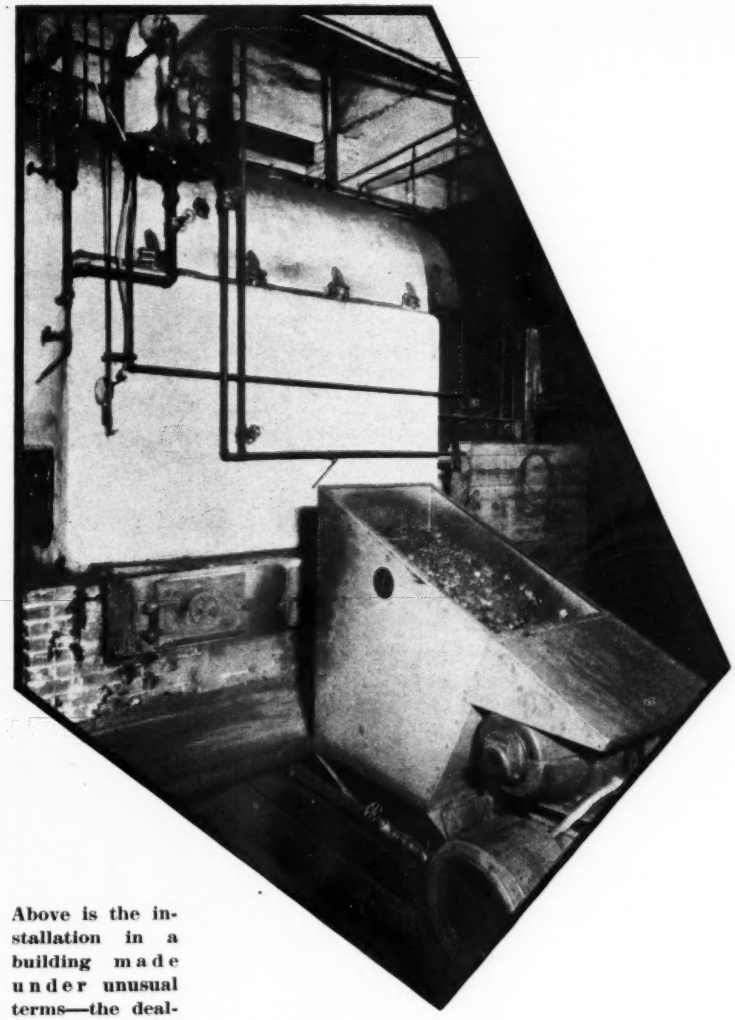
THE SILENT GLOW
OIL BURNER CORPORATION

HARTFORD, CONN.

Boston **Chicago** **St. Paul**

Member National Electric Light Assn.
Member American Oil Burner Assn., Inc.
Member National Fire Prevention Assn.
Member Oil Heating Institute
Member Distillate Burner Manufacturers Assn.

In Canada:
SILENT GLOW OIL BURNER CORP., LTD.
162 St. Catherine St. West, Montreal, P. Q.



Above is the installation in a building made under unusual terms—the dealer agreeing to take his pay out of savings

Facts and figures are what this heating contractor uses to sell stokers . . . . $741 saved on one job . . . . 60% savings on another . . . . . Facts which convince the prospect.

Pointing the Way to Fuel Savings With the Stoker

THE heating contractor will lose stoker sales if he talks theories and generalities, instead of specific facts and figures, is the opinion of W. Ralph Sensenich, Lancaster, Pa., who finds success in using facts and figures. Here is a dealer who not only knows his stokers, but also knows how to sell them. The prospect who intends to stall for time by asking innumerable hypothetical questions is doomed to disappointment that will react to his own benefit, for when Sensenich is on the trail of a stoker sale he has his answers ready. And he also has the proof to substantiate any claims he may make.

"There is a larger prospective market for automatic stokers now than at any previous time," remarked Mr. Sensenich, "because today it is imperative that every possible saving be effected, and that applies to heating costs as well as to other items of expense. Stoker sales are dependent upon our ability to produce definite figures regarding the economy of automatic heat, which includes the savings in both fuel and labor costs. Such figures are of paramount interest to the average prospect.

"A careful study of fuel costs and the type of heating system in use, as well as the size and construction of

the building under consideration, is necessary in order to present to the owner the advantages of the automatic stoker in terms of dollars and cents, as well as the satisfaction to be derived from properly regulated and controlled temperatures."

One of the most important stoker installations made by Mr. Sensenich was sold to the owner of a six-story store and office building. This building is heated from a single boiler and under hand-firing methods it was extremely difficult to maintain comfortable temperatures on the two upper floors.

"Previous to our call on this owner," said Mr. Sensenich, "he had decided that some change was necessary to solve his temperature problem. When we entered his office to introduce the subject of automatic stokers he was close to making his decision, and had to be sold hard on the stoker."

Here was a sales problem that required decisive action. It was evident that the sale would either be made or lost then and there. After a long interview during which facts and figures were hurled back and forth, the owner answered by issuing this challenge:

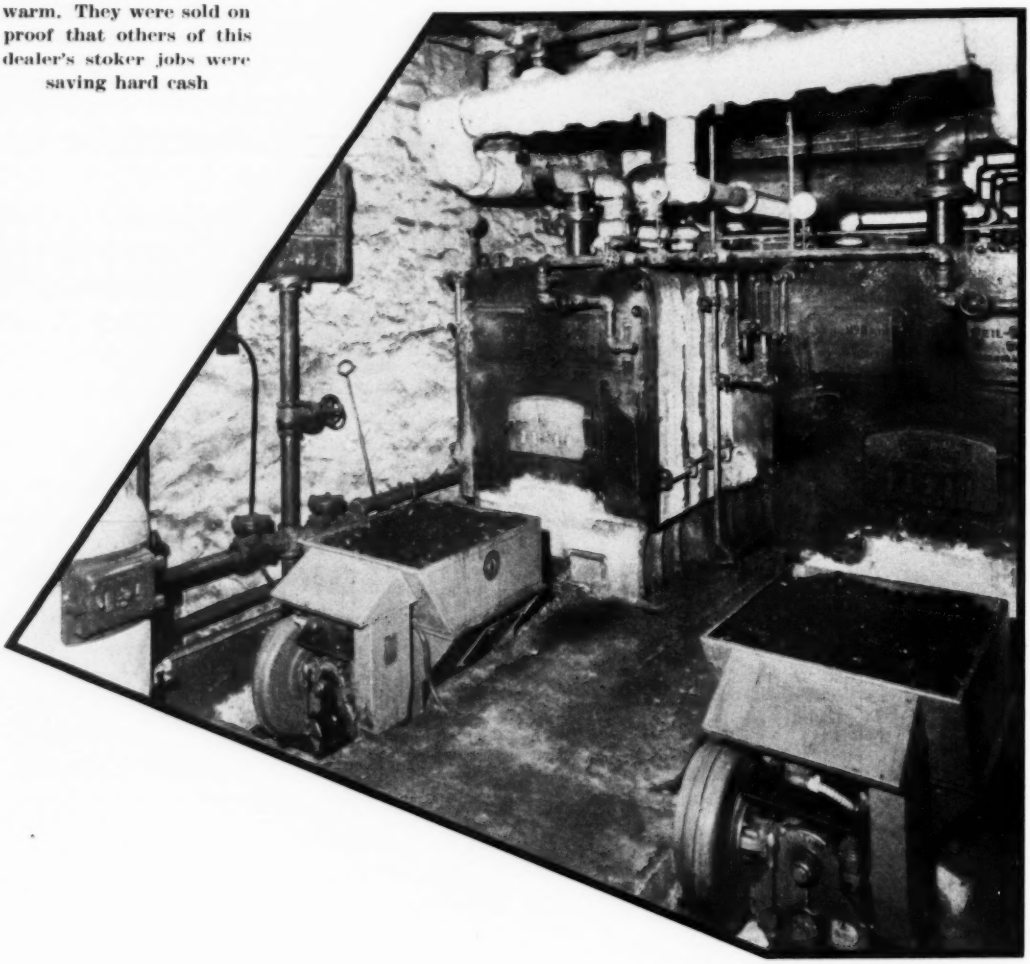
"You claim that the stoker will pay for itself in five years. Are you willing to prove that by selling it on that basis? Will you accept annual payments representing the savings we are able to effect in heating this building?"

No doubt the owner thought this the best way to dispose of the matter, but Sensenich is not to be disposed of in this manner when he knows what he is about. The challenge was accepted just as quickly as the question had been asked. In explaining the unusual details about the sale, this dealer admitted that he does not ordinarily make guarantees or install stokers without a definite contract providing for payment within a specified time.

A CHALLENGE SUCCESSFULLY MET

However, he saw here the opportunity to convince an influential and skeptical customer and of securing a good deal of favorable publicity as well. The stoker was installed under the express condition that the first payment would not be made until one year later, and that the payment would be only for the amount saved over the previous year's heating costs. Each year a similar payment was to be made until the cost of the installation was paid for.

One year after the stoker had been in operation Mr. Sensenich received a check for $741, representing the

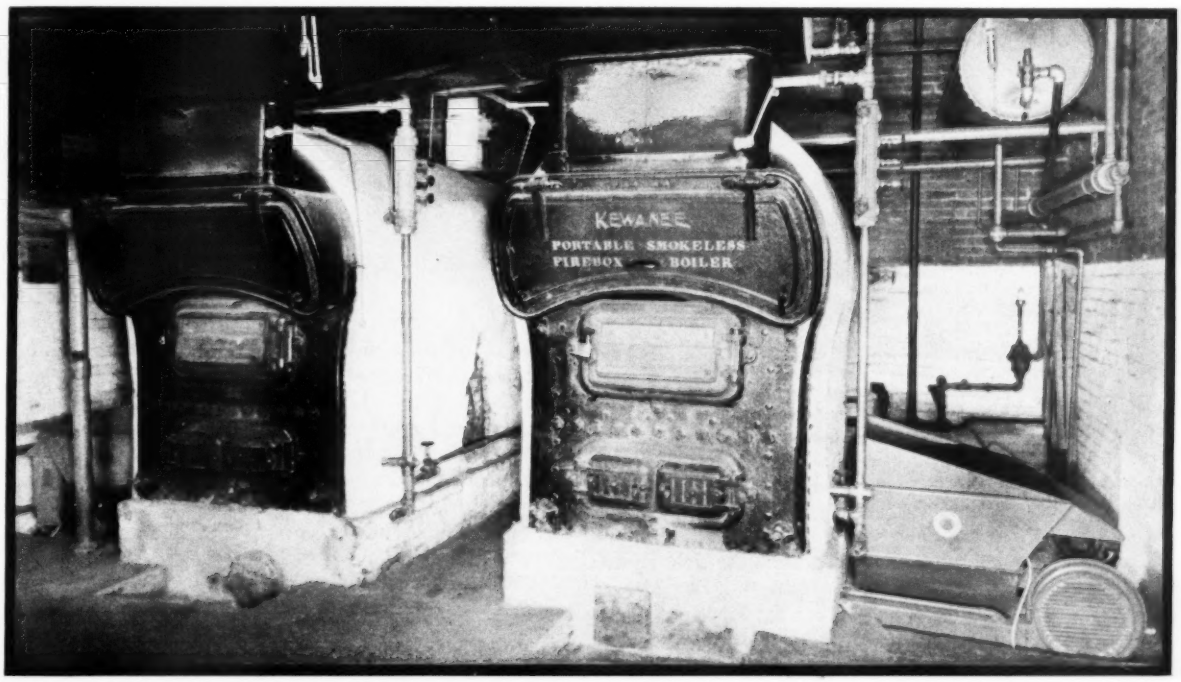


These two stokers help to keep the members of the Loyal Order of the Moose warm. They were sold on proof that others of this dealer's stoker jobs were saving hard cash

exact amount the owner had saved in heating the building. Using these figures as a basis, the stoker will have paid for itself in approximately three years instead of five years as had been specified. However, the actual value of automatic heat in this building is more than the dollars and cents represented by these annual payments. The satisfaction manifested by the tenants was something of a more intangible nature, but perhaps of greater value.

The facts regarding this installation have been fully capitalized by Mr. Sensenich and have been of considerable value in presenting the case of automatic heat to other prospects.

This dealer does not rely upon mere unauthorized statements to impress his customer. He carries the evidence to support every claim. When he tells a prospect that the owner of a certain building saved exactly $741 during the first year a stoker was in operation, he supports that statement by producing a photograph of the check, which is proof that can not be refuted.



These twin stokers were installed in the building owned by a famous retail store organization, selling low-priced novelties—a firm which demands proof of profit before making any kind of an investment

FACTS AND FIGURES

It is a new angle to the old plan of "using the user" as a means of developing new business. Another bit of impressive evidence is a portfolio showing photographs of the exterior of those homes and buildings in which his stokers have been installed, as well as actual photographs of each individual installation. Not only does he have the photographs, but also specific data on both operating and fuel costs before and after a stoker was installed.

For instance, on one of the installations illustrated here he has the owner's own figures to prove that by feeding bituminous fuel through the automatic stoker, a saving of sixty per cent in heating costs was effected during the first year, with a proportionate increase in temperature satisfaction.

In another case a stoker and bituminous coal replaced anthracite fuel and a fireman, also resulting in a saving of sixty per cent during the first year. Details of this nature, that may seem unimportant to other dealers, are part of a methodical plan that is used with telling effect.

His success in merchandising stokers is the natural sequence of good salesmanship and the proper engineering of each installation. He is able to prescribe for each user the proper fuel to develop the maximum heating efficiency from each installation.

Newspaper advertising is planned with a definite objective—to impress the public with the reliability and economy of stoker operation as compared with other methods. This advertising is used to develop prestige rather than for its influence in bringing a large number of direct inquiries.

Direct mail pieces of the kind furnished by the manufacturer are distributed at periodical intervals to a selected list of prospects. The prospect list used for this purpose contains only live leads and is prepared and revised by Mr. Sensenich. Every name is thoroughly investigated before it is entered on this list, because he does not believe in wasting valuable time by contacting people who are not financially able to avail themselves of the proposition he has to offer. But when once a name is placed on this list it is subject to his attention until the sale is definitely made or lost.

Hang Up Record of One Sale a Day!

Taking on a new product, this organization swung into an unusually successful merchandising effort which has produced the remarkable record of one sale a day to the time this report was secured

ON AUGUST 9th, Westover-Wolfe, Inc., 130 Washington Ave., Albany, N. Y., opened a showroom dedicated to the job of promoting the sale of an oil-burning boiler and air conditioning unit. Jumping into the job with enthusiasm keyed to the highest pitch, this organization has hung up a remarkable record. Here, in the language of Wendall Westover, president of the organization, is the way they prepared to make this record, and the manner in which they followed through:

"The combined showroom and offices are located on a high-traffic street, in semi-residential area, a few blocks from the congested business section and across the street from one of the leading moving picture theaters. While revision and decorating were being accomplished, windows lettered, and installation of operating equipment made, the windows were covered with heavy paper upon which was lettered the message as shown in the photograph. During this period, salesmen were interviewed—they came to us as soon as announcement was made to certain banks and businesses that we had the air conditioning contract—a comprehensive sales training course completed, and office forms, order blanks, etc., printed.

WORKING UP INTEREST

"Three 'teaser' or 'blind' ads were published, one each week, prior to the opening date, referring to the heating announcement to come, and including coupons which gave us initial prospects to call upon a few days before the equipment was ready to show. Printed invitations were personally signed and mailed to leading bankers, architects, editors, heating engineers and contractors, offering the facility of a pre-showing of the new apparatus prior to the public display.

"The pre-showing was made the evening of August 8th and behind the covered windows eighty men out of the one hundred and twenty-five invited inspected the operating exhibit.

"On the morning of the 9th, a full-page newspaper announcement portrayed the unit and briefly described it, with the suggestion that it be seen. That day, three hundred and fifty people visited the showroom; during the following days of the first week the average was over one hundred and fifty people coming in as late as midnight.

"Reduced size ads were published twice a week during the next month and we have found it profitable to keep the showroom open until ten-thirty or eleven o'clock six nights a week. Advertising continuity has been maintained and poster boards were used during the month of September in a half-showing. An exhibit was placed in a Better Homes Show the beginning of October and over twenty-five thousand of the total attending saw the equipment—by then including air conditioning apparatus—of whom we talked with some four thousand to describe the apparatus. Like all shows, this was more productive of publicity than sales, which we anticipate later; yet it accomplished a great deal. About one hundred 'hot' prospects were obtained.

"Sales meetings are held each morning at eight-thirty; they include a check up on progress with prospects, new presentation methods, ideas about closing, and keep the men up-to-date on equipment and its application. As additional salesmen are taken on, they are required to

A TYPICAL EXAMPLE OF "COLD 70°". NOTE ROOM THERMOSTAT SATISFIED YET COLD AIR PILED UP ON FLOOR

ELIMINATE "COLD 70°"

Fill the Gap of Intermittent Firing With a Low Limit Control System

FULL performance can be obtained from your burner by eliminating "Cold 70°" with a Minneapolis-Honeywell Low Limit Control System. . . . "Cold 70°", which is nothing other than air stratification resulting in a cold condition even though the room thermostat is satisfied, is due to the burner being off for long periods of time, causing air circulation to stop. A low limit control prevents this.

You can provide complete satisfaction for your customers by urging the inclusion of this low priced control, and increase your profit at the same time. You'll find it mutually beneficial. Minneapolis-Honeywell Regulator Company. Executive Offices: 2801 Fourth Avenue South, Minneapolis, Minnesota. Factories: Minneapolis, also Elkhart and Wabash, Indiana.

BRANCH AND DISTRIBUTING OFFICES: Akron - Allentown - Baltimore - Bloomfield - Boston Buffalo - Butte - Chicago - Cincinnati - Cleveland - Dayton - Denver - Detroit - Duluth - Grand Rapids Hartford - Indianapolis - Jackson - Kansas City - Los Angeles - Lowell - Madison - Milwaukee Minneapolis - Montreal - New York City - Niagara Falls - Peoria - Philadelphia - Pittsburgh Portland, Me. - Portland, Ore. - Providence - St. Louis - Salt Lake City - San Francisco - Springfield - Syracuse Toledo - Toronto - Washington - Wichita - Worchester - Youngstown. CANADA: Minneapolis-Honeywell Regulator Company, Ltd., Toronto and Montreal. EXPORT: New York City. CABLE ADDRESS: "Laboramus"

MINNEAPOLIS-HONEYWELL

Control Systems

Very small, inconspicuous and low priced, the Low Limit Control eliminates "Cold 70°". It cannot cause overheating when used with a Low Limit Cutout Thermostat.

complete the sales school before talking with prospects. All salesmen work on a straight commission basis with bonus for meeting reasonable quotas. Seventy-five per cent of them are earning over two hundred a month and twenty-five per cent are earning over five hundred monthly. Each is allowed fifty active protected prospects; no territorial restrictions are made. As a prospect is sold or 'killed' he is replaced by another. Filing provides a permanent office record, individual salesman's record and tickler call slips.

"Direct mail has not been used as yet, although it is contemplated later. An ample supply of literature has been distributed in the showroom and by personal calls, the complete booklet being withheld until the prospect has received the verbal presentation of a salesman.

ONE SALE A DAY

"Sales have averaged one unit each day since the opening date for the first seventy days. This volume has been obtained largely in Albany, although a few sales have been made in Troy, where a display store is to be opened.

"Several orders have been taken before the purchaser saw the boiler, many have been closed on the first call after seeing the operating display; the average number of calls appears to be five.

"Installations have been under the supervision of engineers on our staff who have had factory experience and training. Every effort is made to have each installation perfect in appearance as well as in mechanical treatment, even at extra expense. The resulting satisfaction is well worth while from the standpoint of pyramiding sales through enthusiastic owners.

"And as the final test—we were in black ink the second thirty days of operation. We attribute it to excellent equipment, good background of factory co-operation, and the fact that every member of the organization has worked more than fifteen hours a day every day."

It is becoming more and more important that the dealer in this field gain for himself a real appreciation of the value of publicity. He should not only see to it that the newspaper in which he is placing his advertising receive from time to time items of interest concerning developments in the fields of automatic heat and air conditioning, but he should be alert to the many possibilities for publicity which will arise in the course of his activities.

Take the case of Westover-Wolfe as an example. As has been indicated, a newspaper campaign preceded the actual opening of the store and the demonstration of the equipment.

The store was opened on August 9th, and on September 3rd, Mr. Westover wrote a letter to the local newspaper which had carried the campaign. By that time it was possible for him to report results and, as this article indicates, they were worth reporting.

In his letter Mr. Westover spoke enthusiastically of the results.

Now, there is only one thing a good newspaper executive can do with a letter of that kind—he must make it public. It's too good to keep to himself, proving, as it does, that his paper gets results. It is logical to suppose that Mr. Westover had this in mind in writing the letter.

At any rate, the newspaper people made the use of the letter that would be expected. An advertisement about three-quarters of a page in size was run by the newspaper. It reproduced Mr. Westover's letter in full, carried a picture of the equipment, and proceeded to prove how valuable its columns were for selling merchandise. The advertisement actually amounted to almost that much space for Mr. Westover's firm since the equipment and the letter were played up so largely.

Note, too, that the letter does its own bit of selling by saying that "the advertising and demonstrations have led to broad public comment and the equipment has received the enthusiastic acceptance which its perfection deserves," so that the letter not only tells what a fine paper the Knickerbocker Press is, but it puts in a lick or two for the equipment.

This is the way the public was "teased" not only by the store window before the opening, but by newspaper copy which similarly awakened interest by not telling more than the fact that an important announcement was soon to be made

A charming library. Note the grille at base of book shelves

Opportunities in Air Conditioning for the Oil Burner Dealer

By V. S. Day,
Chief Engineer,
Carrier-Lyle Corporation

THE popularity of and demand for air conditioning has run ahead of its development. This is readily explainable, as air conditioning has its foundation in the well established practices of heating, ventilating, air washing and humidifying. Thus, air conditioning—a true art—has been regarded by many business organizations simply as a disguise for gaining more sales and more capacity for existing shops and factories.

Despite its exploiting parentage and too rapid growth, air conditioning promises to be a real substantial business. Statistics of the Department of Commerce, comparing the dollar volume for the first two months of 1932 versus 1931, show that air conditioning has enjoyed a 37 per cent *increase* in the face of a decrease of 44 per cent in the allied fan, unit heater and air washer groups. Thus, air conditioning is showing its promise despite the withering depression.

But to be a business it must have value to the ultimate user, it must serve a need. Human comfort and happiness are promoted and benefited by the proper application of air conditioning. What is it? A new humidifier attachment? A fan application? A washer? A gas burning or an oil burning warm air furnace with fans? All these are elements, but the real definition as formulated in the minds of a committee of the American Society of Heating and Ventilating Engineers—the most authoritative body—is the "Simultaneous control of temperature humidity, air motion and air distribution within an enclosure and where human comfort and health are involved, a reasonable purity with regard to dust bacteria and odors."

Air conditioning is different from the ordinary function of heating in that it provides for the control of several factors besides the sensible temperature of the atmosphere.

Sufficient capacity in a heat generating system to elevate the temperature to any given degree does not constitute air conditioning. In fact, it might be the cause for dissatisfaction with the lack of moisture, stagnation, and lack of control. Again, the use of spray chambers, which saturate the air with moisture; steaming and freezing on windows, without regard to proper relation to temperature is not air conditioning. Only the simultaneous control of the several factors give true air conditioning.

Excerpts from an address at the recent Oil Burner Convention.

Nor is the maximum satisfaction to be obtained unless the properly tempered, humidified and cleaned air is controlled in combination and distributed throughout the space with a gentle uniform motion. The problem is two-fold in its requirements—the winter and the summer. The equipment required is limitless. Thus, we have:

EQUIPMENT INVOLVED

A. For temperature control:

1, Furnaces, oil, gas, coal burning; 2, Boilers, oil, gas, coal burning; 3, Unit heaters; 4, Concealed radiators and indirects; 5, Controls; 6, Insulating materials; 7, Refrigerating machinery, several kinds; 8, Unit coolers, fixed and portable; 9, Ice melting tanks; 10, Spray and surface coolers; 11, Cooling towers; 12, Pumps, piping, insulation, motors; 13, Controls—electric and air.

B. For humidity control:

1, Spray humidifiers and dehumidifier; 2, Evaporating pans; 3, Unit humidifiers; 4, Moisture adsorbent systems; 5, Double glass and weather-strip are even necessary considerations in this problem; 6, Hygrostatic control devices.

C. For air motion and distribution:

1, Fans with control or in units; 2, Gravity systems; 3, Ducts, registers, grilles, enclosures, dampers and control devices; 4, Acoustical materials.

D. Cleaning:

1, Filters; 2, Sprays; 3, Precipitators.

E. Purifying:

1, Ozonators; 2, Ionizers.

All of these may be compounded in various ways to give degrees of air conditioning. The field of possibilities is immense, and out of the confusion of devices some standardization and simplification can be expected.

In the present stage of its development air conditioning—though much more satisfactory than simple heating—leaves some details to be accomplished by research and commercial experience. Some of these are:

POSSIBLE IMPROVEMENTS

1. Noise elimination. Because of the necessity for fans and motors, noise may exist. Great improvements have been made by research, but too frequently the equipment is unsuited. 2. Inadequate humidities are provided. Literally gallons of water per day are necessary to humidify the atmosphere of the average home. 3. Windows must be improved for it is impossible to do a correct job of humidification if cold glass condenses out the moisture and exacts a penalty in streaming wet windows for the benefit obtained. Leaky windows, too, have their bad effects in introducing cold low-moisture air to cause drafts, and reduce the relative humidity and dry out interior goods and atmospheres. 4. Distribution systems require much improvement to reduce space requirements, expense of installation and effectiveness for all-year-round needs. 5. Cleaning mechanisms, performing a most important function in the air-conditioning process are imperfectly fashioned from the practical point of view. 6. In the all-important summer cycle of cooling and dehumidifying, the ultimate removal of heat must find a cheaper, more plentiful, or more satisfactory vehicle. In present practice this vehicle is water, be it water for direct cooling which is rarely available at low temperatures, or water for the condensers of refrigeration cycles. The quantities required are rather too great for widespread utilization. Alternatives in the form of air-cooled condensers are available and promise to supplant water for this purpose. 7. Controls are undergoing remarkable advances. The tendency is toward complexity but it is expected that as the requirements are

Homes like these will no longer be considered completely equipped without automatic heating and air conditioning comfort

This home enjoys modern air conditioning comfort. Note the grille at base of the right hand wall

better established by experience, standardized, simple control mechanisms will be evolved.

OIL BURNER OPPORTUNITIES

The oil-burner industry will have its place in the complete year 'round cycle. Its selling organizations are already participating in the marketing of humidifiers, and other small unit equipment, but I refer to the use of oil burners in their direct primary function as heat generators.

There are numerous applications of the oil burner to the winter phase of air conditioning:

1. As auxiliaries to fabricated systems such as warm-air-furnace-fan systems, or in boilers generating steam for use in separate or remote conditioning units. These applications are of interest to you; as dealers, this is your field. 2. As parts of an integral or unitary design, of furnace, air conditioning unit, or boiler. This is a limited field to commercial oil burner dealers.

The oil burner industry is not limited, however, to usefulness in the winter phase of air conditioning. Recent developments in refrigeration and dehumidifying open a definite field to you. I refer to the steam-ejector refrigeration system, in which steam is employed as a motive force, in quantities comparable with those necessary for winter heating. This unique system provides a use for your primary heat generator for all year round.

The cost of operation of this system compares favorably with any other type, it is free of noise and its running mechanism is confined to a fan. Hence, it is especially adapted to household air conditioning. It is in the domestic field that we look for the greatest market for air conditioning equipment, and in this field you are well established. You should benefit greatly.

News for the Dealer

Plumbing and Heating Men Stage Air Conditioning Show

Twenty plumbing and heating dealers are participating in the Spokane Automatic Heating, Air Conditioning and Insulation Bureau, set up to educate the public in modern comfort ideas. Recently an air conditioning show was held, for the period of one week. Newspaper and radio announcements formed the backbone of the advertising campaign to promote the show. Attendance was satisfactory, no effort being made to get mass attendance, but rather to induce those who might actually be interested in air conditioning to visit the exhibit. It is reported that a number of installations and prospective installations were developed by the exhibit.

Air Conditioning Men Convene in New York

Fifty-three dealers in General Electric Co. air conditioning products and their associates from 29 eastern cities were entertained at the Hotel Commodore in New York City on Nov. 18. The occasion was the first general sales meeting to be held by the General Electric air conditioning department.

J. J. Donovan, manager of the department, spoke to the group in the afternoon, reviewing the wide public interest given the new General Electric oil boiler since its introduction in July of this year, an interest which necessitated an increase in orders on the factory, and the employment of a large number of additional men. The newest addition to the air conditioning line of the General Electric Co., the humifilter, was introduced.

Discussed Air Conditioning As One of the Major Industries of the Country

Air conditioning as one of the major industries of the country was discussed by I. W. Rowell, general manager of the Lakeside Co., Hermansville, Mich., manufacturers of air conditioning equipment, before the Rotary Club at Marinette, Wis. Mr. Rowell outlined the growth of the industry and the work that has been accomplished during the past years, pointing out especially the amount of work done in residential and smaller buildings.

Let us introduce to you

AIR CONDITIONING FOR COMFORT

This Brand New Book Gives Sales Points—Complete Engineering Data—and a reliable Background for Your Knowledge of Air Conditioning

AIR CONDITIONING FOR COMFORT is brand new—the first complete book to give the "whys, hows and what withs" of engineering for conditioned air. It is written in concise, clear language that ably answers the flood of questions being asked about this big subject.

Its 256 pages are alive with the tables, diagrams and essential data which an engineer or contractor must have to properly estimate or design a job, be it skyscraper or cottage. They set forth the practical formulas for computing all the components of the various heating, cooling and de-humidifying systems.

Samuel R. Lewis, who wrote the book, is a pioneer in the development of the design of plants cooling for comfort, is past president of the American Society of Heating and Ventilating Engineers, and is a consulting engineer with an impressive record of large and small heating and cooling installations to his credit. Out of these achievements have come the exhaustive knowledge and qualifying experience which makes Mr. Lewis such an admirable choice to write this authoritative book on AIR CONDITIONING FOR COMFORT.

You have the opportunity at last of completely informing yourself on the merits of the various air conditioning systems. Send us $2.00 and AIR CONDITIONING FOR COMFORT will be mailed you promptly—with this additional promise—that if you do not want to keep it, you may return it within ten days and we will refund your money.

CONTENTS OF AIR CONDITIONING FOR COMFORT

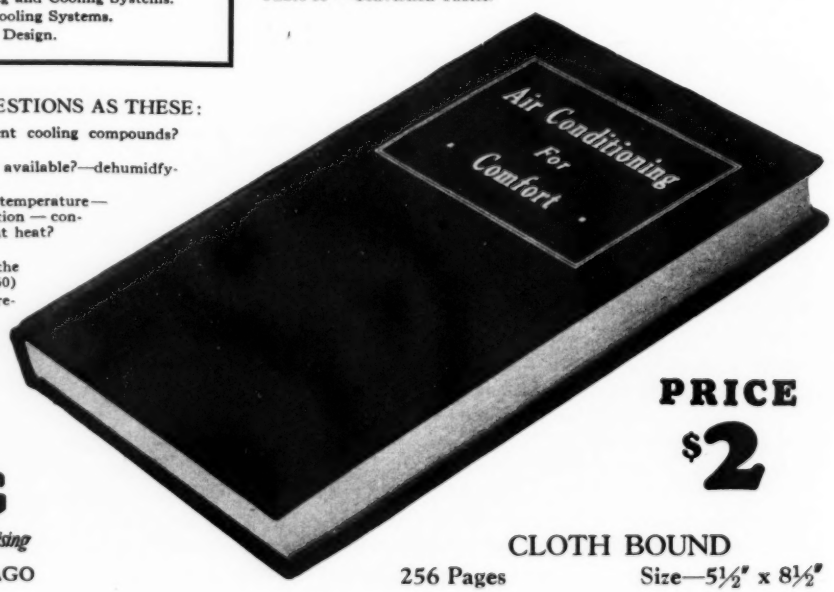
Chapter 1.—Explanation of Terminology.
Chapter 2.—Instruments of Service in Air Conditioning.
Chapter 3.—Relation of the Human Body to Air Conditioning.
Chapter 4.—The Influence of the Type of Heating System Upon Air Conditioning.
Chapter 5.—Heat Transmission Through Building Materials.
Chapter 6.—Calculations for Air Conditioning Requirements.
Chapter 7.—Sunshine, Evaporation, Air Leakage and Lighting.
Chapter 8.—Air Distribution Within Rooms of Cooling Systems.
Chapter 9.—Controlling the Temperature in Air Conditioning Systems.
Chapter 10.—Water Circulation in Heating and Cooling Systems.
Chapter 11.—Air Ducts in Heating and Cooling Systems.
Chapter 12.—Computations for an Actual Design.

36 Tables, 94 Figures, Charts and Diagrams in this New Book, of Which the Following Are Examples:

Figure 4—Capillary type of humidifier.
Figure 11—Diagram of silica gel cycle for removing moisture from air.
Figure 16—Psychometric chart with comfort zone.
Figure 21—Utilization of city water for house cooling.
Figure 25—Coefficients of heat transmission through building materials.
Figure 42—Heat transmitted by evaporation.
Figure 54—Layout of a humidity and temperature control system.
Figure 62—Layout of a simple parallel return heating-cooling plant.
Table 1—Mixtures of air and saturated water vapor.
Table 36—Conversion Tables.

ANSWERS SCORES OF SUCH QUESTIONS AS THESE:

—What are the strong points of the different cooling compounds? (See page 26)
—What are the different humidifying devices available?—dehumidfying devices? (See page 8)
—What is relation of the human body to temperature—moisture — motion — chemicals — radiation — convection—evaporation—sensible and latent heat? (See page 42)
—What cooling system will work best with the various heating installations? (See page 60)
—How do you calculate air conditioning requirements? (See chapter 6)
—What is the reasonable temperature and humidity for satisfactory artificial cooling of living quarters? (See table 2)



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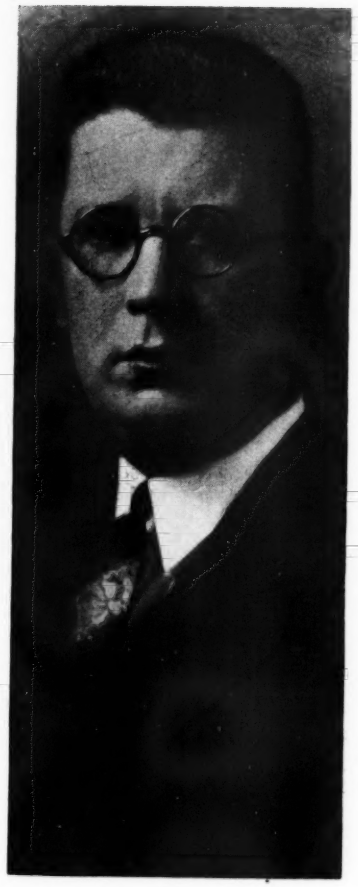


E. V. Walsh

Is He A Prospect?

You can't tell until you've made a heating survey of his home says

E. V. WALSH*

WHILE our merchandising and sales promotion material to our dealers includes four or five plans for a complete presentation of our product, by far the most productive method is that of the salesman's heating survey. This plan was originated by us and has been in operation for a period of more than two years, with increasingly excellent results wherever it has been systematically presented.

Of course, we are chiefly concerned with the enormous market that exists among those who live in their own homes. The ideal coverage which every ambitious dealer aims at, means soliciting these homes systematically until he has covered every desirable residence in his territory and knows definitely whether they are legitimate "suspects." The next step is to turn each "suspect" into a live prospect. The "workability" of this plan is evidenced by the fact that you will see posted in almost all salesmen's room, among our successful dealers, this placard—"Are You Sure He Is a Prospect, if You Haven't Made a Survey For Him?".

TWO KINDS OF SURVEYS

The heating survey, by name, is almost as old as oil burner selling itself. But, ordinarily it goes no further than merely finding out if the party interviewed is a home owner, what type of a heating plant he has, and what kind of fuel he burns. In other words, the results are usually little more than completely building up a mailing list.

Our salesman's heating survey goes much further than this. It is a complete presentation of our story from prospect finding to close. The actual survey itself is the *physical examination* of the heating plant and the home for the purpose of getting full information on all conditions that may pertain to a more efficient heating service. (The Solicitation) The analysis of the fact so obtained and set down in the report is the diagnosis. (The Approach) The proposal based on the conclusions and recommendations is the prescription. (The Presentation and Close) Originally the salesman's heating survey plan was conceived as a means of overcoming the salesman's handicap in selling oil burners during the heating season. However, continuous use of this plan not only proved that oil burners could be sold in the winter, but also that it was an excellent selling plan to use the year around.

SELLS AUTOMATIC HEAT

The purpose of the heating survey is, first, to lift the canvass out of the "cold turkey" class, to make the introduction of the subject more welcome, and to help qualify each prospect in a definite manner.

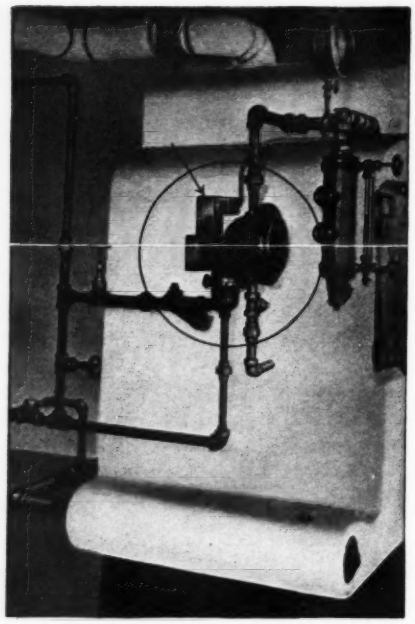
Second, and equally as important from a salesman's point of view, to enable him to get valuable sales information, based on the particular needs and home conditions of the prospect.

Third, to show the salesman how to analyze and tabulate his information into a "proposal" report which definitely sells the idea that automatic heat with its outstanding advantages is well within the range of a modest income on the basis of good economic investment.

Fourth, the survey shows the salesman how to make favorable cost comparisons, not only on the fuel itself, but on the attendant savings that follow the service of automatic oil heating.

Our merchandising story in this, as well as in all of our other plans, is salability—salability not of an oil burner, but of the idea of automatic heating applied to our particular product. In the heating survey we show

* General Sales Manager, Timken Silent Automatic Co., Detroit, Mich.



The Webster Boiler Protector Installed with Water-Feed Operating Level 1" Above Bottom of Gauge Glass.

ITS PRIMARY PURPOSE IS PROTECTION

The Webster Boiler Protector is *not* just an automatic water-feeder. In every detail of design and construction it is built to protect low-pressure heating boilers against damage resulting from accidental low water.

An important protection feature is the location of the Webster Boiler Protector on the danger line—*with the Protector Operating Level 1" above the bottom of the gauge glass.*

Until the advent of this unique safety device, "feeders" were located on the water line. Every surge in water level resulted in "feeding" and eventual flooding which, in turn, meant another device to take care of overflow.

Only in the Webster Boiler Protector do you get these triple-protection features: (1) Danger-line location (infrequent operation, freedom from flooding); (2) Powerful hydraulic operation; and (3) Instantly developed maximum capacity.

Your Opportunity for Profit is Doubled

Sell and install Webster Boiler Protectors on all sorts of existing installations,—vacuum, vapor, one-pipe; coal, oil and gas burning is doubled. Now every installation, regardless of size, can have a Webster Boiler Protector.

Description and installation details on request

WARREN WEBSTER & CO., Camden, N. J.
Pioneers of the Vacuum System of Steam Heating
Branches in 60 principal U. S. Cities—Darling Bros., Ltd., Montreal, Canada

The Webster Boiler Protector a P 19

our salesmen how to make this salability attractive and effective by basing it on the customer's interests rather than on any apparent selfish desire to sell something.

We believe in seeking out the woman first as the starter and chief lever in making the sale. Instead of approaching her as an ordinary peddler in the average manner of cold canvass, we try to get her permission to make a free survey of her heating plant without any obligation. Nearly everybody has home heating problems and this approach more often than not excites her selfish interest at once.

If permission is granted, we then go through the house with her, making full notes of the radiation compared with the size of the rooms, and the area to be heated, as well as all other necessary details of the heating plant, hot water supply, humidification—in fact everything that pertains to what we have to sell. Our salesmen are trained in a very specific way, what to do and say every step of the way.

The salesman is also trained to use his powers of observation during this survey to get all possible information as to home conditions, other modern appliances, the attitude of the husband or other members of the family —in a word, everything that might have a bearing on the kind of sales presentation that he should make. As a matter of fact, a salesman is drilled to remember that his one purpose in making the survey is to close the sale. The whole plan of this survey is laid out so that it becomes, inferentially at first, and directly later on, a complete sales presentation.

ANALYZE PROSPECT'S HOME

It is easy to see that this kind of a survey, right at the start, affords the trained salesman a splendid opportunity to make an analysis of the prospect's home—the value of the home, the kind of appliances already installed, possible objections to automatic heat, whether there are children or old people in the home, and a host of other ideas that lay the ground work for a well planned selling attack. Incidentally, the salesman usually gets the opportunity to bring out his presentation portfolio and sell the woman on the first section of his presentation story, which deals in general with the advantages of automatic heat, particularly as they apply to her.

After the survey is made, the salesman makes an appointment in the near future to return and explain to the husband and wife together the results of his survey. You may be sure that this report is going to contain interesting information to his prospects and usually helpful recommendations in regard to the owner's heating plant. It will often happen that certain repairs or adjustments are necessary to put the heating plant in good condition. The furnace may need resetting or it may be desirable to replace the ordinary valves on the radiators with vacuum valves that will give more efficient service and save real money. In that case, if the dealer happens to be in the heating and plumbing business, he has an order for his pains, whether the prospect buys an oil burner at that time or not. If he is not in the business, it builds business for some other heating contractor.

In this report the salesman also presents a definite proposal based on the customer's actual needs, with a cost comparison which shows how much more economical

automatic heating service is, based on a number of items outside of actual fuel costs, of most of which the customer has never even thought.

During this interview the salesman usually finds the opportunity to again bring out his presentation book and give the husband the entire story, not only of automatic heat, but of the superior application of our product to automatic heating service.

SERVING THE CUSTOMER

In other words, our whole presentation, from approach to close, is prepared on the basis, first, of rendering a voluntary service in the customer's interests rather than that of the salesman's. It has the effect of inspiring confidence in our sincerity and our knowledge of the heating business as applied to each prospect's needs.

In case the order is secured, of course, the salesman's survey is followed by a pre-installation survey made by a competent heating engineer. This is the basis for the specifications of each particular installation. We use this last survey as a selling appeal, too, to show how carefully we build the foundation for our later guarantee of satisfactory service to the customer.

Whether the prospect buys immediately or not, the survey report is kept as a valued reference. And when the prospect is really ready to place an order, it makes it difficult for a competitor to break in.

The salesman's heating survey is applied with particularly good effect in communities where warm air systems predominate. In more than half of these jobs, it is easy to find leaks, as well as other defects, which cut down heating efficiency. In many cases the salesman can recommend a reset or repair and whether the prospect buys an oil burner now, or later, the salesman's visit is going to breed a degree of good will that will give the dealer the edge over every other competitor.

The secret of the outstanding success of this method lies,

First, in its completeness as a presentation from the initial call to the close of the sale.

Second, as an excellent opportunity to make a thorough sales survey on which can be based a presentation adapted to the prospect's particular need.

Third, as a means of doing a powerful job of indirect selling through the art of suggestion while making the survey. (In other words, making the prospect dissatisfied with his present heating conditions.)

Fourth, as a basis for a proposal which will include accessories, such as electric ignition, humidifier, automatic water feeder, vacuum valves, etc., wherever conditions indicate their need and ultimate economy. (A complete presentation sells a complete automatic service.)

Fifth, as a cost comparison in favor of automatic heat from the prospect's own estimates of his present heating costs. (This comparison includes not merely coal or oil costs, but the expenses and economies of the different fuels.)

Finally, as a means of eliminating competition by putting a prospect's interest ahead of the salesman's by securing information not available to the salesman's competitor, and by leaving in the prospect's hands, a record of the survey findings and recommendations, combined with a complete proposal.

The way **IN**

» » » *that's what the Duo-Stat offers*

THE new competition calls for a new selling technique. The building owner's dollar won't cover everything he would like to buy. The dollar goes to the fellows who get IN.

The reading pages of this publication bristle with this fact. They urge you to find the way IN. They show you that specialties are needed—that the specialties must "team-up." That is where the Duo-Stat steps into the picture. It is the greatest team-mate for an oil burner or stoker or damper regulator. It paves the way for remodeling jobs. Its story is fresh, interesting, and compelling. It is part and parcel of the new selling technique.

Let's consider it in practical terms: You know of a building with a poor heating system. You go to the owner and tell him all about it. All he makes out of your technicalities is that you want a job and expect to effect some kind of rather intangible savings.

But suppose on the other hand, you talk Duo-Stat to him. Something new—and interesting—a way to control heat by a combination of outside temperature and radiator temperature—a control with a dazzling record of dollars saved—a control with a definite saving.

"What will it cost," he asks. You tell him. Then you survey the system and quote on the other things necessary to make the system worthy of control. . .

. . . But you get the idea: The Duo-Stat may sell a stoker or an oil burner. Again, the Duo-Stat savings may be added to the stoker savings to make a stoker deal more attractive. Or again it may justify oil heat or gas heat.

Anyhow—it belongs on any selling team. Is it on yours? Write for details.

F. I. RAYMOND COMPANY
629 W. Washington Blvd.
CHICAGO ... ILLINOIS

RAYMOND

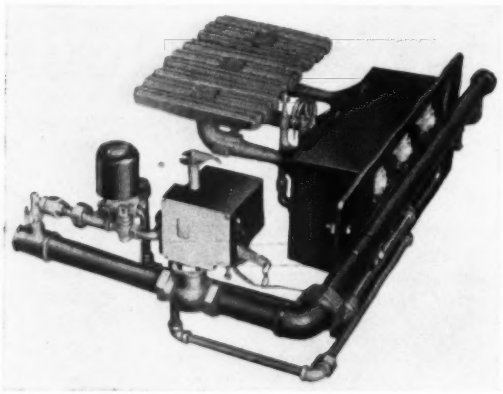
DUO-STAT

New Developments in Products for Dealers

This section is set aside exclusively to give information on the latest in automatic heat and air conditioning products. Our numerous readers who are dealers in this field, or who soon may be, will find sales helps here among these selected items

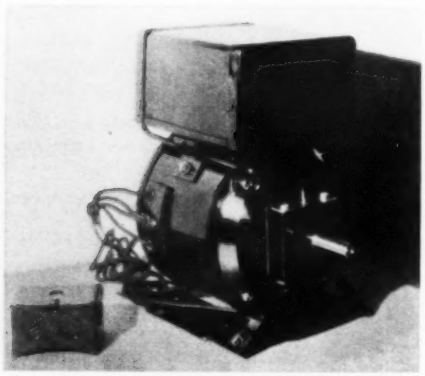
A Conversion Burner for Gas Fuel

The conversion equipment illustrated here has been placed on the market for use with all the assemblages of the No. 1 Red Flash Boiler manufactured by the American Radiator Company. It affords complete automatic water temperature, steam pressure and room temperature regulation with a thermostatic pilot and if desired a low water cut off. Baffles which are not shown in the accompanying illustration also are provided. The American Gas Products Corporation, at 40 West 40th Street, New York, N. Y., is the manufacturer.

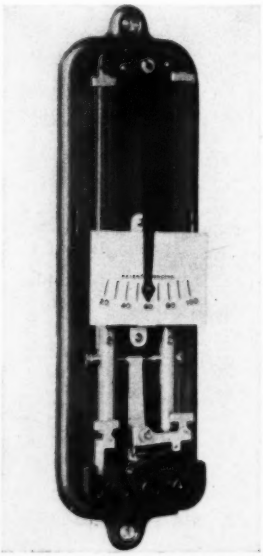


New Capacitor Motor Is Announced

The motor which is shown in the accompany illustration was placed on the market recently for powering



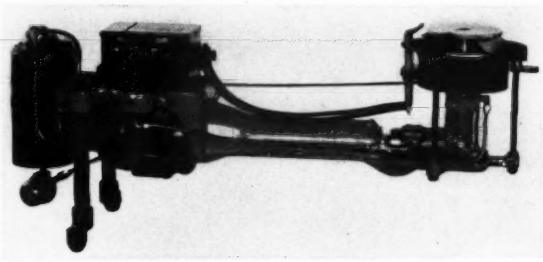
such machines as refrigerators, compressors, oil burners, stokers and pumps. It has been designed to meet the requirements of long hour operation and high torques. One feature of the motor is its mounting. The motor is supported under its bearing reservoirs by leaf-type, heat-treated springs which are attached to a pressed steel base as shown in the illustration. Under each spring there is a heavier steel strip which operates as a snubber to limit the oscillations when the motor is first started. The two-piece conduit box, also shown, is supplied as standard equipment. Westinghouse Electric and Manufacturing Company of East Pittsburgh, Pa., is the maker.



Device Is Introduced for Controlling Humidity

The humidity control device which is shown here uses human hair as the hygroscopic element. The view showing the cover removed indicates how this is applied. The length of the element is made double the length of the device through the pivoting bridge. The device is de-

signed for ordinary use as a three-wire instrument in conjunction with a suitable relay. However, it also may be used to make a pair of contacts at desired low or high humidity. Its application is to the operation of either humidification apparatus or dehumidification apparatus, separately or for the joint operation of both off of the single control. All wired connections are made from outside of the cover. Julien P. Friez & Sons, Inc., located at Baltimore St. and Central Ave., Baltimore, Md., is the manufacturer.

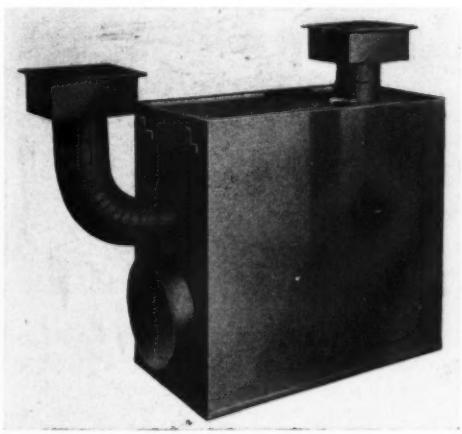


An Oil Burning Unit

The oil burning unit which is shown here has been designed to have a self-cleaning nozzle. The electric ignition is fixed to the burner assembly. It is adjusted from one quart to ten gallons per hour without changing parts or equipment. The oil line consists of a single copper tube from the tank to the burner. It is manufactured by Rayfield Manufacturing Co., 21st and Rockwell St., Chicago, Ill.

Humidifier Uses Heat from Flue

The device which is shown here has been placed on the market as a humidifying unit designed to use the heat from the flue gases on their way to the chimney.



The connection to the boiler smoke-pipe is made in the bottom of the device. The outlet is shown in the accompanying illustration, in the lower part of the left hand face. The upper flue in the same face carries room

3
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1
Complete Elimination of "Cold 70"
2
Absolute Freedom from Ignition Troubles
3
Heats with 1/4 Less Oil

These three features have set McIlvaine out in front for 7 years as a profit maker. They are made possible only by McIlvaine's basic principle of CONTINUOUS HEAT plus a graduated flame that fits the weather.

And McIlvaine is the only burner practical for air conditioning.

McIlvaine installation cost is small—the grates are left in.

McIlvaine is quiet, smokeless and trouble-free. At its new prices it gives you the answer to your need of net profits.

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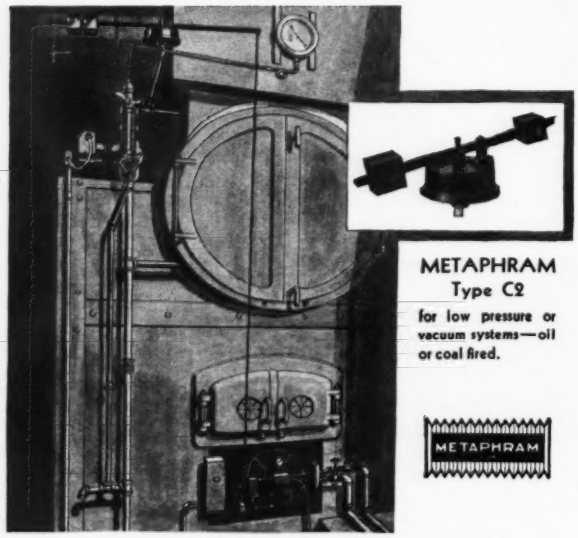

METAPHRAM Gradual Control
covers the entire range of domestic hot water and low pressure boilers and tank heaters, either gas, oil or coal fired.

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Continue to get this service!

Thousands of heating contractors have found Automatic Heat filled with the kind of merchandising, technical and financial information that they wanted.

Now this section extends its services to take in Air Conditioning, a combination which is to revolutionize the American conception of comfort in the home and smaller business establishment.

Renew your subscription. Make certain that you will not miss a single issue.

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Automatic Heat
and
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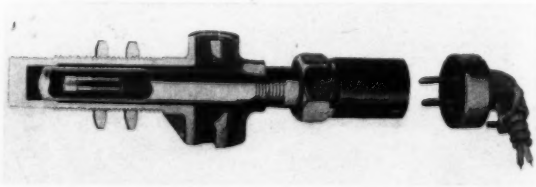
in
Domestic Engineering
1900 Prairie Avenue Chicago

air from the floor above, to the chamber where it comes in contact with heated water. Water fills about three-quarters of the box and completely covers the smoke pipe. A float valve connected with the city water supply regulates the height of this. The humidified air outlet is in the top of the box, together with an inspection opening and a water level indicator. Health-O-Mist Humidifier Manufacturing Co., of Columbus, Wisc., is the maker.

An Electric Portable Humidifier

The device which is shown here has just been placed on the market to serve as a portable humidifier of the electric type. It is 13½ inches high by 11⅜ inches in diameter and has a capacity of 2¼ gallons, of water. It is designed to operate eight hours with one filling. It is for use in the home, office, apartment or sick room. The design is such that only a small amount of water is heated at one time. An automatic shut-off is provided. Workrite Specialty Company, 3129 N. 28th Street, Milwaukee, Wis., is the manufacturer.

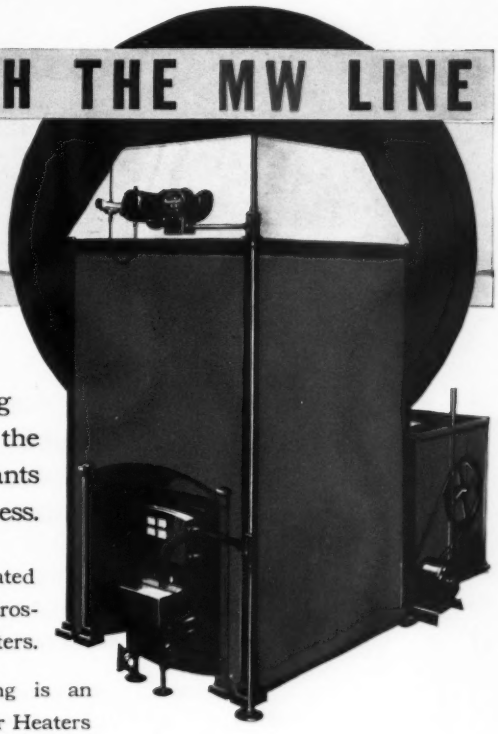


A Boiler Control Is Announced

The device which is shown in the accompanying illustration is a boiler control which has just been announced and placed on the market. It is for the protection of high or low pressure steam or water boilers, fired with gas or oil burners or mechanical stokers, against any dangerous condition arising from a low water level or an excessive pressure in the boiler. Its function is to interrupt the electric current supplied to the burner or stoker, thus cutting off the supply of heat. Petroleum Heat and Power Company, Stamford, Conn., is the manufacturer.

WINTER PROFITS WITH THE MW LINE

Why Not? Every item in the line meets a winter demand, and most of them fit the other 3 seasons



Winter is the time of greatest need for oil-burning utilities. Householders are then in the midst of shoveling coal and carrying out ashes. Yet September has been the peak season of oil-burner sales. What the dealer wants is to level out his sales curve with four-season business.

And this is exactly what the MW line of oil-burning utilities is designed to do. Look over this line. Look about you. Doesn't it fit in everywhere?

In the midst of winter, the failure of obsolete and wasteful heating equipment is most apparent. Cash in on that situation with the MW matched Weather Control Unit.

Among the gigantic total of 13,500,000 homes still heated by stoves are millions of prospects for MW Cabinet Heaters.

Economical water heating is an all-year need. MW Water Heaters fit both domestic and commercial water heating requirements.

Three meals a day being the rule, there is an all-year market for MW Oil-Burning Cooking Ranges.

Learn about MW franchise terms and the cooperation offered to MW dealers. We invite you to clip and mail the coupon.

MW AUTOMATIC WATER HEATER

Domestic and commercial sizes. For houses, apartments, office buildings, schools, shops, factories. Single and battery installations. Hot water at lowest cost. Listed as Standard by Underwriters' Laboratories.

MW "AUTOMATIC WEATHER CONTROL UNIT"

Round and square types. Warms in Winter, cools in Summer—automatically. Low cost and economical upkeep. Most popular air-conditioning units on the market. Listed as Standard by Underwriters' Laboratories.

MW WEATHER CONTROL UNITS

MW OIL-BURNING COOKING RANGE

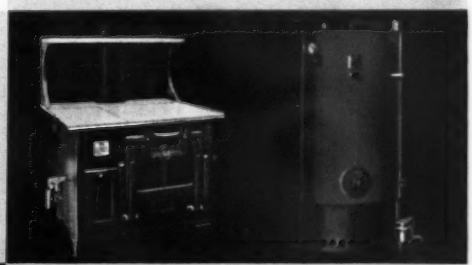
Two types—for homes, restaurants, lunch rooms, roadside stands, hotels, clubs, etc. Quick, clean, uniform, controlled, oil-generated heat—the better, more economical way of cooking, frying, roasting, baking.

MW AUTOMATIC BOILER UNIT

Heating with steam or hot water. Revolutionary burner and tube construction assures most complete heat utilization ever achieved. Small and large capacities. — Listed as Standard by Underwriters' Laboratories.

MW CABINET HEATER
RADIANT · CIRCULATING

Offering new heating advantages and economies in homes, real estate offices, schools, stores, shops, gas stations, waiting rooms, roadside stands, garages, offices, tourist cabins, railway stations, churches and other locations.



PRODUCTS THAT SELL SPRING, SUMMER, FALL AND WINTER

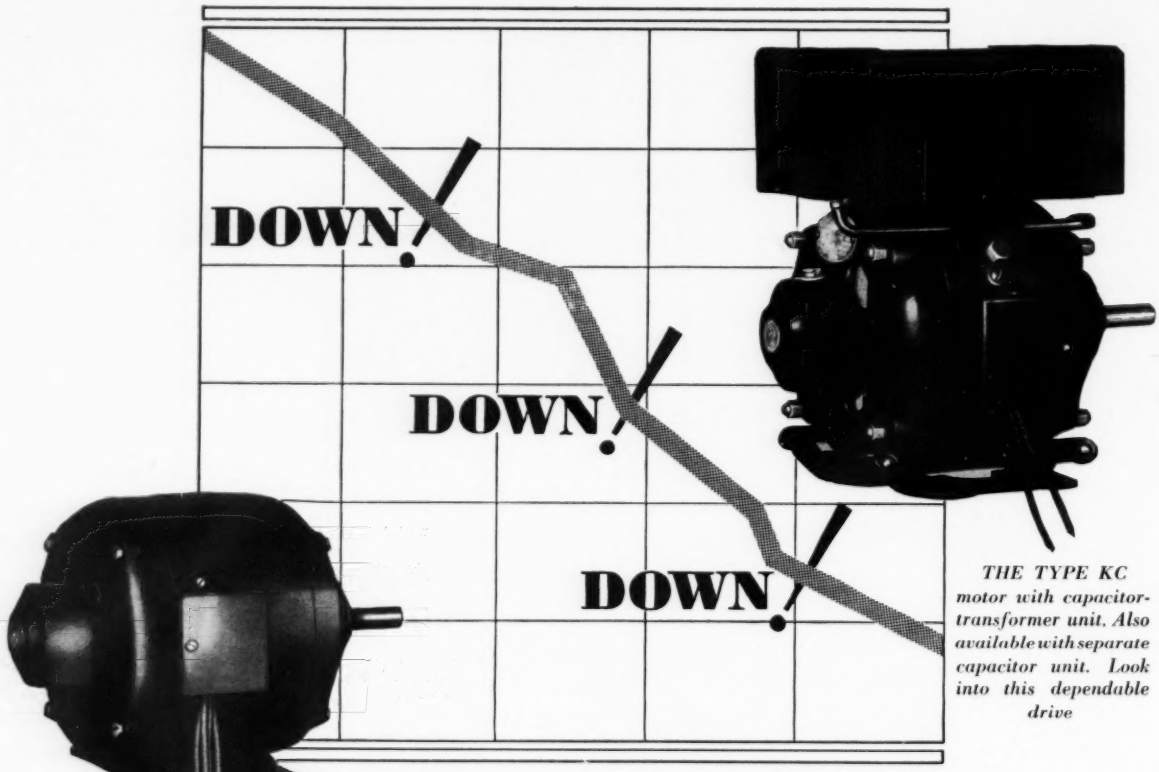
MOTOR WHEEL CORPORATION Dept. B-12
Heater Division, LANSING, MICH.

Please send me full information regarding the MW line of oil-burning utilities, and explaining its sales and profit opportunities.

Name _____

Address _____

City _____ *State* _____



THE TYPE KC motor with capacitor-transformer unit. Also available with separate capacitor unit. Look into this dependable drive

THE TYPE KH resistance split-phase motor equally dependable and efficient. Ask about it

go your service problems when you specify G-E motors

WITH a General Electric motor—available in a wide variety of types and ratings—on your oil burner, the graph of your service complaints approaches zero.

Specify G-E motors. You will find that they meet the torque requirements of your product. You will find them "cost-low" in maintenance, long-lived, and dependable. Backed by years of experience—endowed with the unparalleled acceptance everywhere accorded G-E products—they represent one of the soundest equipment values on to-day's market. Investigate also General Electric transformers, cable, etc. for the modern oil burner.

Call in a G-E motor specialist; he will be glad to coöperate with you in the solution of your drive problems. General Electric Company, Schenectady, N. Y. Sales and engineering service in principal cities.

210-176

GENERAL ELECTRIC

SUPPLY NEWS

FOR MANUFACTURERS, WHOLESALERS, SALESMEN

The Duro Co. Has Been Reorganized

The Duro Company of Dayton, Ohio, which was forced into receivership last year, has been reorganized, and a new company, bearing the same name, was recently incorporated by a committee of creditors and has taken over the assets of the old company and is now operating the business as a going concern. The president of the new company is Wm. T. Hatmaker, who was formerly general manager of the Dayton Pump Co., and who has also served as president of the National Recording Pump Co. In other words, he has had twenty years' experience in the pump business which will be of great value to the new Duro organization. The Duro Company's products are pumps, water systems, domestic and commercial water softeners, cellar drainers, water filters and purifiers, and electric motors. President Hatmaker announces that the old Duro sales organization remains intact.

Now in New Location

International Plumbing Supply Co. of New York City, manufacturers and wholesalers of plumbers' rubber and brass specialties, has moved from 50 West Broadway to larger quarters at 45 Murray street.

Burgess Acquires Interest In Controls Company

The C. F. Burgess Laboratories, Inc., of New York City announces the acquisition of a substantial interest in the United Electric Controls Company, 69 A Street, Boston, Mass., manufacturers of thermostats and limit controls for oil burners and other automatic heating devices. The newly elected board of directors of the United Electric Controls Company consists of: W. D. Cashin, president; B. W. Dezotell, vice president and secretary; James A. Cotter, C. F. Burgess, G. H. Burgess and Jackson Burgess. Mr. Dezotell, who is in charge of the company's affairs, is well known to the industry through his earlier activities with the Time-O-Stat Controls Company.

The C. F. Burgess Laboratories, Inc., has extensive facilities for further research in control devices and is now engaged in the development of certain special units for its associated concern.

Branch of the E. G. Schafer Co. at 6800 Wisconsin avenue, Bethesda (Md.), a suburb of Washington, D. C.

Contracts for $60,000 Addition

The Fretz-Moon Tube Co., Butler Pa., manufacturer of butt-weld steel tubing, has let a general contract to the Rust Engineering Co., Pittsburgh, Pa., for a one-story addition, 300 x 70 feet at a cost of $60,000 with equipment.

Richmond Radiator Co. Announces Appointments

W. G. Langford, president of Richmond Radiator Co., Inc., of New York City, has announced the following appointments:

Allen P. Livar has been appointed general sales manager of this company, succeeding A. H. Schroth, who recently resigned. E. A. Schwerdtle has been appointed sales manager of its enameled ware division, and Don D. Smith has been appointed sales manager of this company's new pottery division.

Mr. Livar is a graduate of Georgia Tech with a degree as mechanical engineer. He has had a long experience in the heating and plumbing industry, having been associated with American Radiator Co., Johns-Manville, Inc., Hajoca Corp., Pierce, Butler & Pierce Mfg. Corp., and The Trane Co.

Mr. Smith was formerly sales manager for the Abingdon Sanitary Mfg. Co. of Abingdon, Ill.

Patterson Foundry & Machine Co. to Enter Heating Field

The Patterson Foundry & Machine Co., East Liverpool, Ohio, announces that it expects to enter the heating field about the first of the year with a complete line of conditioned air heating systems, air conditioners, oil burners, domestic stokers, and gas fired equipment for all types and sizes of heating loads. Intensive research and experiment have been carried on for some time.

Distribution, it is understood, will be through specialty engineering agencies operating on exclusive territorial arrangement, and backed by active merchandising methods of the company.

To Distribute Dail Steel Products Co's Systems

The L. J. Tierney Co., manufacturers' agents, with headquarters at 1425 Statler building, Boston, has been appointed distributor for the Boston area for the systems of heating and air conditioning manufactured by the Dail Steel Products Co., Lansing, Mich. The Tierney company will continue to represent the Heggie Simplex Boiler Co., and the James P. Marsh Corp.

Moves to Larger Quarters

The Pacific Plumbing and Heating Supply Company of San Francisco, Calif., formerly located at 332 Sixth street, has moved and is occupying larger quarters at 1015 Folsom street.

Abe Smith, Inc., Again in Business

Abe Smith, Inc., has re-opened its plumbing and heating supply business at 51 Fair street, Paterson, N. J.

Perfex Corp. Appoints New Representative in Denver

Perfex Corporation of Milwaukee, Wis., has appointed the Urquhardt Service of 2133 Blake street, Denver, Colo., to handle its products. Its territory includes the states of Colorado and Wyoming.

Will Manufacture Oil Burners

The Shield Oil Burner Co., Inc., of Hartford, Conn., has been granted a charter to manufacture oil burners with a capital of $50,000. The incorporators are G. K. Schieldge, 12 Irving street, Hartford, Conn.; William Zachs, 810 Farmington avenue, West Hartford, Conn.; D. L. Pessin and Harry Zachs.

The New England Oil Burner Corporation of Hartford, Conn., has been incorporated with a capital of $50,000, composed of 5,000 shares of $10 each. The incorporators are: Philip Shoor, 204 Blue Hills avenue, Hartford, Conn.; L. S. Silver, 188 South Marshall street, Hartford, Conn., and O. E. D'Arche, West Hartford, Conn.

The Yankee Oil Burner Corporation of Hartford, Conn., has been incorporated with a capital of $50,000, to manufacture oil burners. The incorporators are: Aaron Shecter, 210 Magnolia street; Saul Wachtel, 99 Love lane, and Bernard Roth, 153 Blue Hills avenue, all of Hartford, Conn.

Exhibit of Excelso Products Corporation at New York Exposition of National Association of Master Plumbers

Appointed Agents for Kieley & Mueller, Inc.

Universal Valve & Fittings Co. of Cleveland, Ohio, has been appointed sales agent in that district for Kieley & Mueller, Inc., of New York City, manufacturers of pressure control devices and allied specialties. The Universal company will carry a suitable stock of the Kieley & Mueller products.

Opens New Office at Lancaster, Mass.

Arthur S. Hall Company, 12 Tecumseh street, Worcester, Mass., has just opened a new office at Lancaster, Mass. This office will handle the lines of Halsey W. Taylor Co., The Chicago Faucet Co., and Davis Engineering Corp., in the New England territory.

Plumbing Goods Shown on Foreign Trade Development Voyage

When the S. S. Point Ancha of the Gulf Pacific Mail Line, Ltd., cleared the last of the American West Coast ports, en route to the principal ports of the Isthmus and many of the Central American trade centers, she carried a complete display of Pacific Coast products and manufactures. Among these were two booths devoted to plumbing goods, one being a showing by Crane Company, the other by the West Coast Sanitary Manufacturers. A large space was devoted to these exhibits, which were in charge of representatives from the Chambers of Commerce of Seattle, Portland, San Francisco and Los Angeles, as well as special agents from the U. S. Department of Commerce. Most of these men were particularly well qualified to show the goods and quote prices and terms due to their experience in the export field.

The Point Ancha sailed from San Francisco November 1st and will not return until early in February, 1933. Among her ports of call at which she will spend varying lengths of time are Balboa and Cristobal, Panama; Cartagena and Puerto Colombia, Colombia; Curacao and La Guaira, Venezuela; Kingston, Jamaica, Port au Prince, Haiti; Santiago, Cienfuegos and Havana, Cuba; Vera Cruz and Tampico, Mexico.

Appointed Representatives for Milwaukee Stamping Co.

Keyes & Mayer of Baltimore, Md., have been appointed representatives for the Milwaukee Stamping Co. of Milwaukee, Wis., manufacturers of unit showers. Keyes & Mayer will cover the State of Maryland and the District of Columbia.

Arrange for Tenth Annual Oil Burner Show

Final arrangements and floor plans for the tenth annual oil burner show, which is to be held at Hotel Stevens in Chicago, June 12 to 16, 1933, have just been announced by the American Oil Burner Association in a prospectus entitled "A Decade of Progress."

International Acetylene Association Holds Successful Convention

International Acetylene Association held its 33rd annual convention at the Penn Athletic Club, Philadelphia, November 16, 17 and 18, with a good attendance.

Many valuable papers were presented at this convention, among them several of special interest to the heating industry, such as: "The Training of Journeyman Welders," by S. Lewis Land, educational director of Heating and Piping Contractors National Association; "Welded Piping in a Central Heating and Power Plant," by R. D. Williams of Baker, Smith & Co., New York City; "Economics of Welded Piping in Homes," by Fred Macurer of Air Reduction Sales Co., New York City.

Refrigerating Engineers Meet in New York

Refrigeration and air conditioning fundamentals will be stressed in the technical papers to be read before the 28th annual meeting of the American Society of Refrigerating Engineers, to be held Dec. 7 to 9 at the Hotel New Yorker, New York City. Among the other subjects up for discussion are heat transfer, lubrication, and various plant and machinery problems.

At the last annual meeting held in New York, two years ago, more than five hundred men engaged in refrigeration and air conditioning attended the various sessions. The A. S. R. E. meeting coincides with the 1932 Power Show.

St. Louis Engineers Meet

The St. Louis Chapter of the American Society of Heating and Ventilating Engineers held its regular monthly meeting at the Roosevelt Hotel in St. Louis, Mo., on Wednesday evening, November 16.

President J. M. Foster called the meeting to order, after which the minutes of the October meeting were read and approved. This was followed by reports of the chairmen of the various committees.

Reporting for the nominating committee, J. W. Cooper stated that the following gentlemen had been selected as candidates for election at the December meeting:

President, C. A. Pickett; first vice president, Paul Sodemann; second vice president, J. W. Cooper; secretary, C. R. Davis; treasurer, A. L. Walters.

Board of governors: James Foster, George Myers, E. A. White and E. E. Carlson.

The meeting was then turned over to Paul Sodemann, chairman of the program committee, who introduced Albert J. Nesbitt of the John J. Nesbitt, Inc., of Philadelphia as the evening's speaker. Mr. Nesbitt's address was entitled "A Logical Basis for Determining the Volume of Air to be Circulated in Classroom Ventilation." This address was both interesting and instructive.

Sh'h—
Traps - 89c

If price alone counted we could sell traps for 89c and make money. Not a trap like the one above—no sir! That has a phosphor-bronze thermostat, bronze casting and the materials and workmanship necessary to give performance. It's a B. & J. trap and is made to go on the job and stay there. That's REAL ECONOMY—think it over.

BARNES & JONES INC.

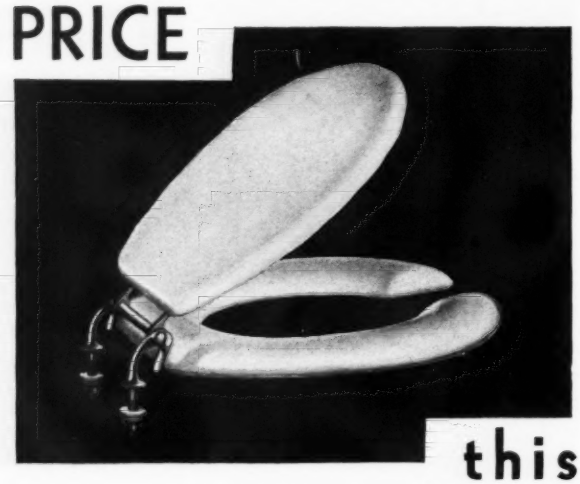
127 Brookside Avenue, Jamaica Plain, Boston, Mass.
Send, without obligation, your book describing Barnes & Jones Vapor and Vacuum Systems of Heating.

You should have this Catalog

Name.....
Company.....
Street.....City.....
State.....

360

When a Sale depends on PRICE



this is your best bet!

There are many people to whom a toilet seat is just a toilet seat—meaning that their only concern is "How much does it cost?" With the majority of these people, you are wasting your time and effort when you try to point out the advantages and true economy of purchasing a sheet-covered seat.

To satisfy this market, we now offer Bonalite Mahogany Seats and Bonalite Sprayed White (and colored) Seats at prices that are ridiculously low.

And it is a "Quality" Seat

While the prices seem unbelievably low, these are not "cheap" seats. They maintain the high Bonalite standard of quality and are made possible only by ingenious new manufacturing processes that we have developed.

The grained mahogany finish is of great beauty and exceptional durability. A special waterproof varnish developed in our own laboratories provides a hard surface that does not paper mark in shipping. Scratches made in the finish will be almost invisible because the stain is impregnated 1/8" into the core. This exclusive feature is a particularly effective sales producer.

The sprayed white finish has a high luster, excellent adhesion and is unusually tough. This finish has an exceptionally heavy body and is also one of our own developments.

The die-cast one-piece core is unusually strong and tough. It cannot split, warp, expand or contract. The hard surface is waterproof and affords maximum finish adhesion, while the soft center provides a resilience that prevents breakage. All corners are well rounded. This core is patented and cannot be duplicated by others.

The heavy brass hinge is nickel plated and each leaf has three screws that cannot pull out. All Bonalite seats are fully guaranteed.

Ask your jobber about the ridiculously low prices of these seats. If he has not yet secured complete information, write directly to the

AMERICAN RUBBER PRODUCTS CO.
8561 Butler Ave. Detroit, Mich.

BONALITE SEATS

Business Personals

Stanley C. Hope

STANLEY C. HOPE, whose likeness is shown herewith, was recently elected president and general manager of the Gilbert & Barker Manufacturing Co. of Springfield, Mass., as told in the November issue of this magazine. Mr. Hope joined the Gilbert & Barker Mfg. Co. in 1912 as a salesman and was transferred to the company's sales office in London in 1919. Three years later he went to the company's office in Paris, where he did outstanding work in promoting the sales of the company's products throughout France. In 1927 Mr. Hope returned to the home office to become second vice president, and in January 1929 he was promoted to the office of first vice president and general manager, a position he held until he was elected president and general manager early in November, 1932.

L. A. CORNELIUS, president of the Wolverine Brass Works of Grand Rapids, Mich., has been appointed director of public welfare in that city, accepting the appointment only for the next six months. He assumed his new duties on December 1, and he will serve without compensation. Mr. Cornelius has served his city as chairman of the Community Chest drive and has for years taken an active interest in welfare matters. Local papers devote much space to editorials on his appointment, congratulating the city on securing his services for this difficult post, because of his broad executive experience and his organizing ability, but they add that they "cannot congratulate Mr. Cornelius, because it is a great personal sacrifice he is making."

WILLIAM F. BRANNAN, president of the Anchor Post Fence Co. of Baltimore, Md., and a director of the American Oil Burner Association, has been appointed chairman for Maryland of the Committee on Industrial Rehabilitation in the Fifth Federal Reserve District. The National chairman is A. W. ROBERTSON, chairman of the board of Westinghouse Electric and Manufacturing Co. of East Pittsburgh, Pa.

WALTER J. KOHLER, JR., of Kohler Co., Kohler, Wis., and Mrs. Celeste McVoy Holden, daughter of Mrs. Fortunato Jerace of Chicago and Rome, Italy, were married in Chicago on Monday, November 14, and are spending their honeymoon in Mexico. Mr. Kohler is a son of Walter J. Kohler, president of Kohler Co. and former governor of Wisconsin, and is a graduate of Yale University.

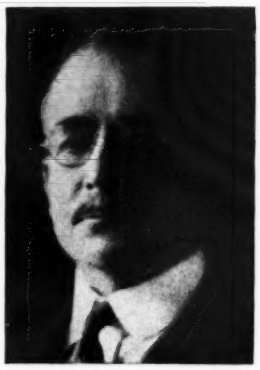
WALTER F. PERKINS, who has been manager of the works of Worthington Pump and Machinery Corporation at Harrison, N. J., since 1927, has resigned to become vice president and general manager of the Bart-

lett Hayward Company at Baltimore, Md. Mr. Perkins assumed his new duties on December 1.

FREDERICK E. BAUSCH has just been appointed representative for Davis Engineering Corporation of New York City to cover the St. Louis district. He will make his headquarters at 1614 Chemical Building, St. Louis, Mo.

O. A. KROOS, secretary-treasurer of Kohler Co., Kohler, Wis., is suffering from injuries received while hunting in the western part of Sheboygan county one day in the middle of November. Shots from an unknown hunter's gun hit him in his legs, and it took physicians quite a while to remove them. His condition is not considered serious.

HUGH BENET, formerly manager of Worthington Pump & Mach. Corp.'s Holyoke, Mass., branch, has succeeded W. F. Perkins as works manager at its Harrison, N. J., plant.



A. H. Schroth

A. H. SCHROTH has resigned as vice president and general sales manager of the Richmond Radiator Co. of New York City, as mentioned briefly in the November issue. This ends a connection which has lasted more than fifteen years. Mr Schroth served two years as western manager for Richmond Radiator Co. with headquarters in Chicago, after which he was called to New York and made general sales manager, vice president and director of the company, in which capacities he has served the last 13 years. He is a member of the American Society of Heating and Ventilating Engineers and a licensed professional engineer in New York state. For several years he was a member of the executive committee of the National Boiler and Radiator Institute. His home is at 90 South Oraton parkway, East Orange, N. J.

Death of S. S. Gould

Seabury Smith Gould, second vice president of Goulds Pumps, Inc., of Seneca Falls, N. Y., died at his home in that city on November 25, in his 45th year, of pneumonia. Mr. Gould was born in Seneca Falls and was a graduate of Hamilton College. After graduation he entered the sales department of the Goulds organization, and in 1912 was transferred to the company's Chicago office, where he remained a year. In 1914 he returned to the plant in Seneca Falls and was elected assistant treasurer. Some years later he was made second vice president. His widow and a son survive him.

Frank J. Gorse, assistant treasurer of the Scovill Mfg. Co. of Waterbury, Conn., died recently at his home in that city in his 71st year. Mr. Gorse was born in New York City and had been associated with the Scovill Mfg. Co. for more than 50 years. He was made assistant treasurer in 1920.

CAPITOL

With Election Over Let's Go to Work

Now is the time to pull up our belts a notch and go to work.

Business is improving with us every week.

The trade knows that Capitol Brass is one of the few reliable manufacturers who have a large stock on hand ready for immediate delivery.

We should see higher prices.

Don't wait any longer and be caught short.

Check over your stock and send us your fill in order right now.

Bohn Aluminum & Brass Corporation
CAPITOL BRASS DIVISION
MANUFACTURERS OF BRASS VALVES, BOILER TRIMMINGS AND PLUMBERS' BRASS GOODS
DETROIT-MICHIGAN

Jobbers' Credit Association to Hold Eighth Annual Dinner and Dance

The Jobbers' Credit Association, Inc., of New York City will hold its eighth annual dinner and dance in the grand ballroom of the Hotel Commodore, New York City, on Saturday evening, December 10. This affair has in previous years been one of the outstanding social events in the plumbing and heating industry. The entertainment committee is planning to make this affair one of the best in the association's history. The chairman of this committee is T. Arthur Johnson, president of the J. D. Johnson Co., Inc., and the other members are: Elmer Doolittle, Central Plumbers' Supply Co.; A. N. Behrer, Behrer & Co.; P. R. Mork, Crane Co.; Milton M. Goldsmith, Sam S. Glauber, Inc.; J. Ryan of Pierce, Butler & Pierce Mfg. Corp.; E. E. Basch, Regent Plumbers' Supply Co., Inc.; Edward Schwartz, E. Schwartz Plumbing Supply Co., Inc.; Mortimer Smolka, E. Smolka Plumbing Supply Co.; Henry Gasner, Saltser & Weinsier, Inc., and William Maxwell of Clinton Plumbing Supply Co., Inc.

Glenn B. Van Buren is secretary of the Jobbers' Credit Association, Inc.

N. E. Metal Products Golfers Finish Season

The New England Metal Products Golf Association held its final golf meet of the year in the form of a turkey shoot on Thursday, November 4, at the Belmont Springs Country Club, Belmont, Mass. The scores turned in indicated that all the players did an exceptionally fine job in mastering such a difficult course.

The prize winners were as follows: 1st prize, F. A. Monroe; 2nd, N. W. Dennison; 3rd, A. T. Papineau; 4th, E. B. Lane; 5th, R. B. McKeown; 6th, W. H. Taylor. Each winner received a 12-lb. turkey. Among the cards turned in were:

	G.	H.	N.
P. W. Donoghue.	93	14	79
W. H. Taylor ...	95	16	79
J. S. Nicholl.....	98	17	81
E. B. Lane.....	83	8	75
William Hayes ..	89	8	81
Wm. McKeown...	88	13	75
W. Weiss 117		27	90
G. Elliott 108		19	89
W. Earle	94	15	79
F. Johnson	98	..	..
J. G. Ross.....	97	13	84
M. G. Chamberl'n.123		30	93
L. Selshenen.....114		21	93
J. Riley 114		..	..

	G.	H.	N.
N. W. Dennison..	89	15	74
F. A. Monroe...	89	17	72
T. MacAuliffe....120		..	..
T. Mullen 110		..	..
M. N. Monks.....112		..	..
F. P. McGinty....105		..	..
A. T. Papineau..	89	14	75
H. S. Murdock...108		21	87
F. Eggleston....	No card		
F. J. Lyons.....	No card		
E. P. Abbott....104		..	..
P. W. Taylor....100		..	..
W. J. Killeron...122		..	..

Rolland J. Hamilton, President, American Radiator Co.

R. J. Hamilton Expects Building Trade Revival in 1933

"WE believe that there is an exceedingly large pent-up demand for residential work, which, in terms of floor space, represents 55 per cent of all building construction," said Rolland J. Hamilton, president of the American Radiator Co., New York, in a recent address. "This is destined to bring substantial activity over a considerable number of years and we believe that 1933 will see the start of such activity."

The address was given at the semi-annual meeting of the Producers' Council, an organization which includes many companies and associations interested in the building industry.

Mr. Hamilton believes that a national shortage of housing space will follow the "unscrambling" of the situation brought on by the doubling up of families. The country is prepared to finance such building. The establishment of the federal home loan banks, he regards as "one of the most important dates in the history of the building industry" with President Hoover deserving full credit for this measure which "promises to mark the beginning of a new day in American home ownership."

The revival of general confidence and of investment confidence in particular is the basis upon which building trade improvement depends. In his analysis of this condition, Mr. Hamilton said:

"The replacement of food and clothing must be immediate, whereas the replacement of shelter can be postponed," he continued. "In the midst of a period more acute than ever before experienced, the weak-hearted and non-observant fail to appreciate that the stream of our business is dammed, and not dried up. The building industry is just as sound today as it has ever been, and never has the public demand for new and better buildings of all kinds been more pronounced than at this moment."

At the meeting, the Council adopted a resolution urging recognition of the architect as the specifying authority and less deviation from specifications as an essential step in curtailing price cutting in the building field.

Obituaries

James L. McAvity

James L. McAvity of the T. McAvity & Sons, Ltd., in St. John, N. B., Canada, died at his home in that city early in November in his 66th year. He was a member of the board of directors of the McAvity concern and a grandson of the late Thomas McAvity, founder of the business. He was also a director of the New Brunswick Power Co. and the New Brunswick Telephone Co. As an infantry brigadier he saw service in the World war. After being invalided home, he commanded camps at St. John and Sussex, N. B., and he also served as instructor for Canadian troups in Massachusetts. He participated in the Klondike gold rush in 1897, and was later for several years representative for the McAvity concern at Winnipeg.

Andrew Glover Mercer

Andrew Glover Mercer, founder and first president of Rumsey Pump Co., Ltd., of Seneca Falls, N. Y., died at the home of his daughter, Mrs. John Curtis, in Boston, Mass., on November 9, of a stroke of apoplexy. He was born in Waterloo, N. Y., and came to Seneca Falls when a young man and founded the pump company. He moved to Boston about 35 years ago. His widow and a daughter survive him.

John E. Spillane

John E. Spillane, service manager of the Sloan Valve Company, Chicago, died at his home in Oak Park, Ill., on November 19. He had worked continuously up to the day of his death, which was caused by acute indigestion, and his passing was a profound shock to his business associates.

Mr. Spillane was connected with the main office of the Sloan Valve Company for the past twelve years—first in the sales and advertising departments, and later establishing a service organization which he directed with outstanding success for many years and which brought him in contact with the trade throughout the country. He is survived by his widow and three daughters, his mother, two brothers and three sisters.

Paul A. Dwyer

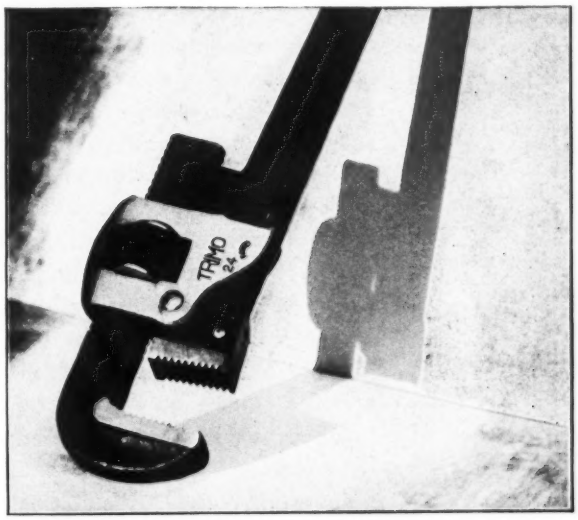
Paul A. Dwyer, president of the Mechanical Service Co. of St. Paul and Minneapolis, Minn., died Saturday night, November 5, at the St. Joseph hospital in St. Paul, in his 42nd year. Mr. Dwyer was for many years district manager for the Clarage Fan Co., the National Regulator Co., the Illinois Engineering Co., the Skidmore Corporation and the B. F. Sturtevant Co. He was a graduate of St. Thomas College and served as a lieutenant in the field artillery during the World war. His widow, a sister, and a brother survive him.

William D. Rees

William D. Rees, for many years construction superintendent for the American District Steam Company at North Tonawanda, N. Y., died recently at his home in that city in his 72nd year. Mr. Rees spent his entire

FOR THE BUSINESS YOU WANT

HERE'S THE WRENCH



ALL STEEL

TRIMO

Put yourself on an even footing with your competitors by putting your wrench equipment on a par with the best. There is no finer tool for turning pipes than the constantly improved all-steel Trimo pipe wrench.

TRIMO

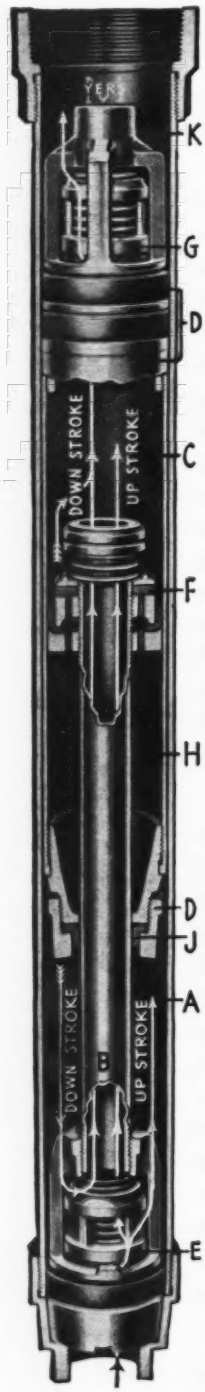
Made for half a century by

TRIMONT MFG. CO., INC.

Roxbury (Boston), Mass.

MYERS

DOUBLE ACTING POWER CYLINDERS



When installing power pumping equipment the problem of securing ample volume from the source of supply frequently confronts the buyer. Small diameter wells prove troublesome. Often those of larger diameter will not permit of a single acting cylinder being used to secure the desired amount of water. Whether the well be of large or small diameter the volume of water to be pumped from it can be increased from sixty to seventy per cent by using a Myers Double Acting Power Working Cylinder. This one advantage alone has sold hundreds of them for Myers dealers.

Other equally important features have popularized Myers Double Acting Power Working Cylinders among users the country over. Mechanical perfection. Superior performance. Fewer pumping hours. Smaller pumping units. Increased volume at lower costs from any source. If you sell and install deep well power pumps of any manufacture, this Myers Cylinder in a range of styles and sizes for almost any service will relieve you of most of your water volume problems.

Your inquiry will receive prompt attention.

THE F. E. MYERS & BRO. CO.
ASHLAND, OHIO.

business career in the steam heating industry. He learned his trade from his uncle, the late Birdsall Holly, inventor of the central heating system which bears his name. He was connected with the American District Steam Co. 53 years, remaining with it through various changes in its organization and in its removal from Lockport to North Tonawanda. He is survived by his widow, two sons and two daughters.

Emil H. Kunde

Emil H. Kunde of the Pittsburg Water Heater Co., Pittsburgh, Pa., died early in November at his home in Beechview, Pittsburgh, in his 64th year. He had been connected with the Pittsburg Water Heater Co. for the last fifteen years. His widow, his mother, two sons and three daughters survive him. One of his sons, Edward Kunde, is part owner of the Malone Plumbing Supply Co. of Pittsburgh.

Frank O'Day

Frank O'Day, president of the Oil City Boiler Works of Oil City, Pa., died recently after a short illness. Mr. O'Day was a director of Oil City Trust Co. of Oil City, Pa., Venango Oil & Land Co. of Venango, Pa., and Reno Water Co. of Reno, Pa., and he was a member of the New York Athletic, the Calumet and the Lambs Club in New York City. His widow and three sons survive him.

Paul E. Sowers

Paul E. Sowers, sales and consulting heating engineer of York, Pa., lost his life in an automobile accident a few weeks ago. Mr. Sowers was formerly associated with the Vapor Heating Co. of York, Pa., as engineer, but for the last five years he has operated a sales and consulting heating business in York under the name of Paul E. Sowers Co.

Charles Edward Tomppert

Charles Edward Tomppert, president of the plumbing firm of Gray & Tomppert at 840 East Chestnut street, Louisville, Ky., died at his home in that city on Wednesday afternoon, November 9, in his 61st year, following an illness of several months. Mr. Tomppert was a grandson of a former mayor of Louisville. He entered the plumbing field as an apprentice, was later in life a member of the Louisville Examining Board of Journeyman Plumbers, served several terms as president of the Louisville Master Plumbers' Association and was also active in the Kentucky state association. His wife and a daughter survive him.

John C. Harrington

John C. Harrington, a plumbing contractor in Bismarck, N. Dak., for the past twenty years, died recently at his home in that city after a long illness in his 66th year. Mr. Harrington was born in Rochester, Minn., and was engaged in the plumbing business in Fargo, N. Dak., before he moved to Bismarck.

John H. Emery

John H. Emery, who had been in the heating business in Milwaukee, Wis., for many years, died recently in his 68th year.

Value of Consistent Advertising Proved by Profits

"A recent study of the Advertising Federation of America has shown dramatically just how indispensable a tool advertising has become for the far-sighted business man," Dr. Julius Klein, assistant secretary of commerce stated in a radio address recently. "The Federation's analysts studied the records of 120 corporations—and lest there be any question as to whether the findings were due to temperary conditions, they went back over a seventeen-year period.

"Sixty of the companies whose records were analysed had been consistent in their advertising over the seventeen-year period, steadily increasing their expenditures each year over the year before.

"This group of successful companies spent more for advertising in 1930 and 1931 than in the two preceding years, and in 1931 their profits approximated the average for the preceding five years. Advertising did not do it entirely; the products these firms were manufacturing or selling had to be good and fairly priced or their customers would not have continued to buy them in steadily increasing volume, no matter how vigorously they were publicized; but in every one of these sixty cases a consistent and well planned advertising policy played an absolutely essential part in placing the firms in the secure positions they hold today.

"That is especially well demonstrated when we compare the course taken by those firms with that of the other sixty companies studied by the Federation. They were all advertisers, too, but not consistent advertisers. When business was good, they would advertise heavily, but when a slack period came they would radically curtail their publicity programs. Now in contrast with the other group, all of these organizations, seventeen years ago, were among the important American businesses. Today one-fifth of them have either gone out of business or are operating on a very restricted basis. Less than half of the firms in the group have retained anything like the prestige they enjoyed seventeen years ago," Dr. Klein stated.

The Advertising Federation's report which Dr. Klein was discussing is entitled "Consistent Advertising and Today's Profits."

Wholesalers Must Pay Emergency Sales Tax

By MAX F. BURGER

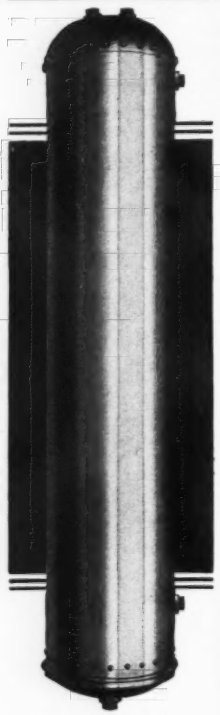
UNDER the act entitled "The Emergency Relief Sales Tax Act of Pennsylvania" a 1 per cent sales tax in the state of Pennsylvania is imposed on all sales made where the product involved is not intended for resale. This law became effective on the 19th day of August, 1932, when it was approved by Governor Gifford Pinchot of Pennsylvania, and it will be effective until February 28, 1933.

Under this act it is the duty of every vendor (dealer) on or before the first day of April, 1933, to transmit to the Department of Revenue of the Commonwealth of Pennsylvania, upon a form prescribed, prepared and furnished by the Department, a return under oath or affirmation, of the gross income arising from sales of tangible personal property during the preceding six months' period ending February 28, 1933.

The law as enacted is not clear whether or not the sale of plumbing fixtures or heating equipment to a contractor is considered wholesale or retail. This uncertainty also applies to the sale of pipe and fittings, etc., to utilities or to manufacturers who fabricate it into other equipment which is then offered for resale. The uncertainty also applies to other building material such as paint, builders' hardware, roofing, etc., covering all material which is used in the construction of buildings. There is also a question whether it may not apply to material which is being sold for maintenance purposes.

The courts of the state of Pennsylvania have passed on a similar question and in Com. versus Gormly, 173 Pa. 586, 589, the court held that "A plumber who in putting in steam and water heating apparatus buys the necessary articles and materials from dealers in plumbing materials; works himself, employing other plumbers to help; gets paid by charging for the labor and adding a percentage to the cost of the material; has no place of business but his workshop, and does not do business as a buyer and seller, is not a dealer in goods, wares, and merchandise, within the meaning of the laws imposing mercantile license taxes. 'He does not buy to sell the articles he uses. He does not buy to sell them in the literal sense and he only buys them when he has a job of work to do for which he requires them. As between the dealer and himself, he is the consumer. He needs the articles in his business. He puts them into the buildings, putting his own work upon them, but when they are placed there they are not in the same shape as when he received them, but as a compact whole composed of all the materials required for the purpose, no matter from what source he obtained them.'"

Clyde L. King, secretary of revenue for the Common-



"COPPER for SATISFACTION"

It's a *'buying market'*

wherever you show this new, improved

G&C DOMESTIC

Riveted Top and Bottom

COPPER RANGE BOILER

A husky brute for strength—and as 'safe as the Bank of England' from collapse!

- Solid copper rivets top and bottom, heavily backed with solder.
- Sediment easily removed by drain at low point of bottom of tank.
- Sturdy construction assures lasting satisfaction—guaranteed against collapse!

Write for descriptive circular.

For Every Installation Specify G & C Boilers

There is a type for every installation—hotels, apartments, clubs, residences, public buildings, etc.

Gerstein & Cooper
1-3 W. Third St.
South Boston, Mass.

G & C BOILERS
TRADE MARK REGISTERED

Note convexed bottom with drain at lowest point, eliminating sediment traps.

One of seven that *produce!*

TALK fuel savings to your prospects and you are speaking their own language. That's what they are interested in, saving money. And then show them how the Kelly No. 2 Vacuum Valve, and all of the seven automatic non-adjustable valves in the KELLY Line operate to the homeowner's advantage. The vacuum feature in the No. 2 KELLY Valve operates so as to cause quick heating of the radiators, and maintains heat hours after the fire has been banked.

The KELLY story is a profitable one to listen to.

Ask your jobber

GUARANTEE

KELLY Valves are subjected to practical steam and vacuum tests before shipping and are GUARANTEED FOR FIVE YEARS when installed and operated under proper conditions.

KELLY BRASS WORKS
226-32 W. Ontario St., Chicago, Illinois

wealth of Pennsylvania, made the following ruling:

"A sale is made to a consumer when it is made to one who does not customarily resell the goods either in the form and condition in which they were purchased, or made over or changed into some other form of tangible personal property. If a sale is made of goods which are resold by the buyer as anything other than tangible personal property, the first sale is a taxable sale.

"To illustrate, the tax would apply to the sale of building materials to a contractor who builds a house and then sells the same as real estate, since real estate is not tangible personal property. Furthermore, if the buyer customarily disposes of the goods purchased to others in any manner other than by sale, as this word is defined in the act, the sale of such goods to him is taxable. The tax applies to sales to contractors, builders, electricians, plumbers, painters, paper hangers, garage men and other persons engaged in similar occupations, of articles to be installed on or incorporated in real estate or personal property belonging to others.

"If, however, such articles are being purchased for resale as tangible personal property and at the time of such purchase the purchaser furnishes to the seller a certificate stating that such articles are being purchased for such resale the tax shall not apply to such purchaser. In such case the purchaser will be held responsible for the tax on such articles upon resale by him."

A distinction is to be made between the sale of plumbing and heating material sold to contractors for construction work, modernization work, repair work and maintenance, as well as material such as pipe and fittings sold to utilities or to manufacturers who fabricate it into other equipment which is then offered for resale, and such material which is sold for the contractor's showroom and is offered by the contractor for resale over the counter, or which may be sold to hardware stores for resale purposes.

In the latter case the wholesaler would not be considered a vendor under the Emergency Relief Sales Tax Act of Pennsylvania, and a tax on such sales is not payable by the wholesaler.

This is a matter of great importance to the wholesalers in the plumbing and heating industry and in fact all wholesalers of building materials.

I would recommend that the wholesalers call a meeting, discuss this question and work out a plan providing for the payment of this tax without unnecessarily disturbing the market.

There is nothing illegal in competitors agreeing on a plan to reserve 1 per cent of their sales for the purpose of the tax. This could not be construed as an agreement on price. Failing to provide for that may result in great financial loss to all wholesalers who make no provision therefor, should the Department of Revenue be sustained by the courts of the State of Pennsylvania under the principle set forth in Com. v. Gormly 173 Pa. 586, 589. 34 A 282.

The sales tax act permits the vendor to add 1 per cent, which is the amount of the tax, to the retail price of the material sold, provided the 1 per cent added represents the tax imposed by the act. If such practice is followed it will be necessary that the actual retail price be shown separately on the price display signs, tickets and tags, and the tax is also required to be so shown, and all bills rendered in connection with the sale of such property

must show the retail price and tax separately. It is also necessary that wholesalers, in the sale of supplies for construction purposes, etc., keep a separate sales record separating such sales from sales made to contractors' showrooms or stores, and to hardware stores for resale purposes, the latter not requiring the tax.

The only exemptions under the terms of the act as affecting the wholesalers of plumbing and heating supplies are:

"Sales made to the United States Government."

"Sales not within the taxing power of this Commonwealth under the commerce clause of the United States Constitution."

"Sales for resale."

The tax applies to sales made to the Commonwealth of Pennsylvania, its political subdivisions, and to state-owned or state-aided institutions.

Problems in Plumbing—

(Continued from Page 36)

by the house drainage lines. Note that beyond the septic tank there was installed an intercepting basin and beyond that a set of laterals. The idea was that in dry weather when the water table is sufficiently low, water will drain from these laterals. In this intercepting basin there is a second outlet which is located 3 in. above the one leading to these laterals. As indicated by the drainage lines of Fig. 10, this outlet connects to the line leading to the sump in the pump room in the basement. The discharge of this sump is raised and run into a second set of laterals, similar to the first set, located at the right side of the house in the upper ground level. The operation is this: When the lower ground water level is so high as to make the first set of laterals, which operate by gravity, ineffective, the sewage accumulates in the intercepting basin until it rises to the height of the second outlet, when it flows into the sump of the pump room. Then it is picked up by the sump pump where it is raised to the necessary elevation and discharged into the high laterals.

It is not known, naturally, how high the municipal sewer will be installed at some future date. Also, if it is a combined storm and sanitary sewer, as is likely in this particular locality, the matter of sewage backing into the system is a serious probability. As a result, provisions were made so that the entire basement drainage system can be separated from the present sewage disposal system. This is illustrated in Fig. 8 in the case of the laundry trays. It will be noted that there is a tee at the vent connection of the laundry tray drain and immediately below it is a drainage line which contains a plug caulked into the hub. This drainage line is marked as running to the sump in the pump room. When the change over is desired, it will be necessary only to change the position of the tee so as to break the connection to the outside line and make the connection into the drainage line under the floor. This drainage line also takes up the floor drain waste. The drainage connections for the basement toilet also can be reversed by connecting into the stub shown in Fig. 10.

All of the laterals serving the septic tank and the sump pump were laid in crushed stone in order to assist

4 REASONS for the WIDESPREAD use of
Jarecki RED BRASS FITTINGS
1
Heavy—Banded
2
High Grade Steam Metal
3
Clean-cut Chamfered Threads
4
Every Brass Fitting individually tested under pressure
Write for Full Information
JARECKI MFG. CO.
Erie, Pa. U. S. A.

George J. Dehn of Compound Injector & Specialty Co., and William Redieske of the Eagle-Picher Lead Co., both of Chicago

the system to dispose of water.

A second drainage system is indicated as discharging into the settling basin in the pump room. This system collects the water entering the light areas surrounding the basement windows, the agricultural tile.

A third drainage system is indicated in Fig. 10 by the dash lines. This takes care of the gutter down spouts. This drainage is carried to the front of the house and is discharged into a culvert and open ditch alongside of the main road.

The entire plumbing job including the water supply and sewage disposal facilities were designed and installed by Katz and Lewis Plumbing Co. of Chicago.

November Meeting of Pittsburgh Engineers

The Pittsburgh Chapter of the American Society of Heating and Ventilating Engineers held its regular monthly meeting in the Assembly Room of the Fort Pitt Hotel in Pittsburgh, Pa., on Monday evening, November 14. The meeting was called to order by H. Lee Moore, who, in the absence of President R. B. Stanger, had been appointed temporary chairman. Twenty-five members and guests were in attendance.

H. Lee Moore, chairman of the nominating committee, submitted the following nominations to be voted upon at the December meeting, which is also the annual meeting of the chapter:

President, George S. McEllroy; vice president, P. A. Edwards; secretary, J. L. Blackshaw; treasurer, H. B. Orr; board of governors: R. B. Stanger, Peter O'Neill and F. H. Hecht.

M. A. Benson presented the speaker of the evening, W. S. Brotzman, associate meteorologist of the United States Weather Bureau, in charge at Pittsburgh, who explained the making and interpretation of weather maps and told much of interest concerning weather phenomena near Pittsburgh.

Ontario Chapter Meets in Toronto

The Ontario Chapter of the American Society of Heating and Ventilating Engineers held its regular monthly meeting on Monday evening, November 7, at the Prince George Hotel in Toronto.

P. B. F. Fittings

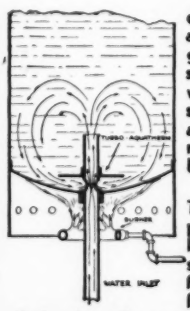
EVERY Brass Fitting made by PHOENIX is of RED METAL and receives the following tests:

A—Inspection after Casting
B—Inspection prior to Threading
C—Inspection of Threading
D—Air-Under-Water pressure test.

"If it's a 'P B F' it's a quality Fitting."

Phoenix Brass Fittings Corp.
IRVINGTON NEW JERSEY

SOMETHING NEW!
NOW—CLEAN—FRESH HOT WATER
WITH THE
TURBO-AQUATHERM



Turbo-Aquatherm
A new patented device which prevents mud rom accumulating in the boiler.

The principal enemy of efficiency and long life in any hot water boiler is the gradual accumulation of sediment and impurities which occur in all water supplies and which gradually, due to gravity, accumulate in the bottom of the boiler.

The Dahlquist Patented Turbo-Aquatherm is simplicity itself but positively keeps all foreign matter in suspension assuring the user fresh, clean hot water fit for cooking and drinking purposes at all times. (See diagram).

No surges of muddy or rusty water—no more danger of burnouts. Very inexpensive and can be had with any Dahlquist Copper Boiler for home use. Only a Dahlquist can give this service. Write for particulars.

Super-Aquatherm Gas Underfire

Automatic Gas Unit With Side Arm

Architects and heating engineers may rely entirely on Dahlquist workmanship and experience, whether for range boilers, automatic storage boilers or heavy pressure boilers.

DAHLQUIST MFG. COMPANY, 60 WEST 3rd STREET SO. BOSTON, MASS.

After dinner, which was served at 6 o'clock, it was decided that the board of governors should select a member and an alternate for the nominating committee of the parent body. Following this President J. Sydney Wood introduced the principal speaker of the evening, G. Playfair, Toronto representative of Johnson Service Co., who presented a moving picture film of temperature control systems.

Detroit Engineers Hear Informative Talks

W. G. Malcomson gave an interesting discussion on the "Detroit Building Congress" and Russell G. Crevistón, sales promotion manager of the Crane Co., Chicago, talked on "Business Promotion" at the recent meeting of the Detroit chapter of the American Society of Heating and Ventilating Engineers. L. L. McConachie, president of the Detroit chapter, presided over the meeting at which 65 were in attendance. William C. Boales and John L. Fuller were appointed as committee of arrangements for the summer meeting in 1933. Reports were received from the membership committee and the treasurer. Herbert E. Paetz discussed the meetings of this coming season.

San Francisco Trade Golfers Play Claremont Course

From the net score standpoint, there was nothing to complain of when members of the Plumbing and Heating Club of San Francisco and their guests met for the November golf tournament, as everyone broke a hundred. The November meet was held on the 17th at the Claremont Country Club, situated in the foothills back of Oakland. Donald O'Hair rounded the sporty course with a gross 89, his handicap of 15 giving him a net 74, which put Mr. O'Hair out in front in Class A. Stuart Greenberg shot a gross 95, his 23 handicap yielding a 72 mark, with which went the honors in Class B.

The scores turned in were:

	G.	H.	N.		G.	H.	N.
Rainwater	97	19	78	Elliott	90	9	81
O'Hair	89	15	74	Clark	93	15	78
Kraus	104	25	79	Hensley	101	23	78
Somers	96	Guest	96	Fleming	96	17	79
Higgins	102	21	81	Greenberg	95	23	72
Gabbert	94	19	75	Fulte	101	20	81

Appointed Plumbing Inspector and Sewage Plant Operator

Carl H. Grams, master plumber at Watertown, Wis., has been appointed city sewage disposal plant operator and plumbing inspector of that city. The position of operator and plumbing inspector were combined by the city council several weeks ago. Previously the city did not have a plumbing inspector on a full time basis, but recent laws enacted by the state legislature provided that cities of the third class must have such an official. It was decided that the two jobs could be combined and thus have one man handle both positions.

Contract covering the heating installation at the new Medical School building of the University of California, San Francisco campus, was awarded the Alta Electric and Mechanical Co., Inc., of San Francisco, at its bid of $35,000.

It costs your customer so little to use Duriron Acid-Proof Drain-Pipe, it seems foolish for you to gamble with your reputation by using ordinary drain pipe.

And there is much more profit in it for you too, because labor costs are just the same. Duriron drain pipe is installed exactly like extra heavy cast-iron soil pipe.

Whenever you have replacements or new installations of drain pipe where acid wastes occur, there is only one satisfactory material . . . satisfactory both to you and the building owner. That's Duriron.

Use it in school, college and industrial laboratories' kitchens of hotels and restaurants, photographic studios, engraving plants, battery stations, soda fountains, and in cinder fills where corrosion is outside the pipe.

Quick shipments. Write for Bulletin and Price List.

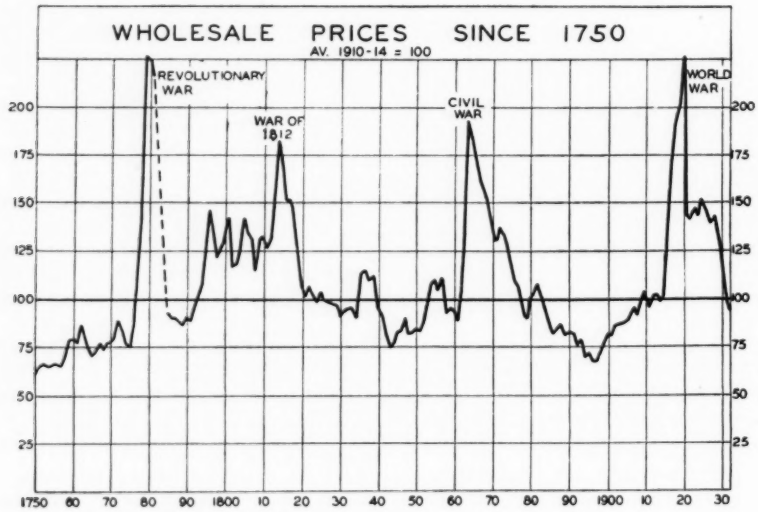
THE DURIRON COMPANY, INC.
410 N. Findlay St. · Dayton, Ohio

DURIRON ACID PROOF DRAIN-PIPE

American Wholesale Prices Since 1750

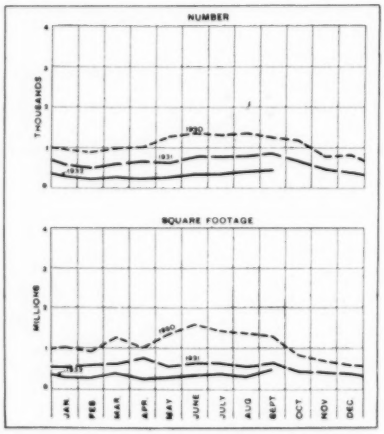
THE course of wholesale prices annually since 1750 is shown in this chart. This 183-year record is given in a recent bulletin of the Cleveland Trust Co., Cleveland, Ohio. The chart does not refer to plumbing and heating products alone as it covers all items on which data could be secured. The figures have only recently been assembled and give a picture of American business never available before.

The influence of wars on prices is strikingly shown the four peaks covering major conflicts in which the United States was engaged and the higher levels from 1793 to 1815 showing the effect of the Napoleonic wars in Europe. War advances in commodity prices are shown to be sudden with post war declines less rapid but of longer duration.

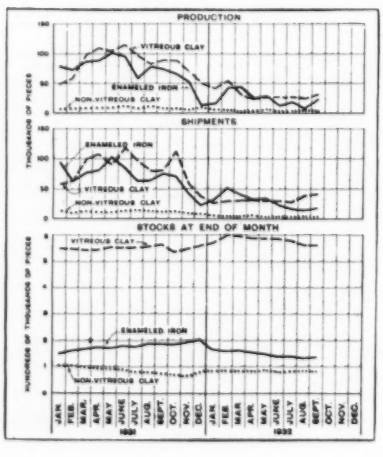


Previously, after-war declines have always been checked at about the levels of today's markets. Normal business activity and even prosperity, as the bank's bulletin points out, may be resumed when prices are low but not while they are rapidly falling.

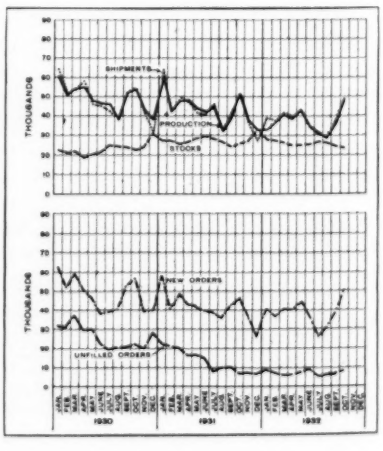
The three small charts on this page are taken from government reports and portray statistically the recent record of bathroom accessories, steel boilers and range boilers, based on reports submitted to the Bureau of the Census by manufacturers of these commodities



New Orders for Steel Boilers



Bathroom Accessories



Range Boilers

A Half Century of Plumbing—

(Continued from Page 47)

ter plumbing and better installations of plumbing due to the thinking of the men in the business.

I trust that this will serve to clear up the misunderstanding which has arisen as a result of the use of the words circuit and loop.

Minneapolis, Minn. W. W. Hughes.

My Dear Mr. Hughes:

All of the plumbers in this country agree that it is necessary to protect the water seals of traps against back pressure and syphonic action. And, the only way we know of to do this up to this time is to supply air at the outlet side of the trap at about the same pressure as the air at the interior side of the trap. In other words, the air pressure in the interior of the plumbing piping and the pressure of the air contained in the room where the fixture is located should be balanced.

It is my opinion that the installation of an adequate air supply to the plumbing system is much more important than the waste piping, for if the waste pipe is incorrectly connected to the fixtures the faulty running of the pipe will be discovered immediately due to either a water leak or a stoppage of the pipe itself. However, in the matter of venting there may be a defect in the piping but this might not show up immediately. A defective vent pipe or connection might operate for a considerable length of time before being discovered.

I personally believe that the diameter of all waste pipe commonly used in plumbing systems carrying water of any type does change. I have never seen waste pipe, that has been in use for some length of time, the diameter of which has not decreased. I believe we all agree on that. Of course, that would not happen if the water running through the plumbing piping system were clear or filtered. If this is so, that the diameter of the pipe changes, surely the vent pipe that conveys air at some points and takes away excessive air at other points should not be subject to a change in diameter. In other words, the size of the pipe should remain constant.

In the loop or circuit venting system or any other type of venting where a single pipe is used to carry water and supply air at the same time, if the diameter of that pipe changes, surely there will be a day of reckoning when that pipe is no longer able to supply air and carry away water at the same time due to the decrease in the diameter of the piping. I believe that the plumbers of this entire country should adopt the best system of running waste and vent pipes and surely there is no argument to use against the continuous waste and vent system, especially where no liquids pass through the venting system.

You speak of increasing the sizes of waste pipe. Where that has been done it has been found that it is all right after it is first installed but as time goes on that larger sized pipe will also decrease in diameter and more readily than the pipe that is sized properly for a plumbing system. It has been found that the increasing of the piping to an incorrect size is not advantageous. I would judge that there is not much difference, as far as

SHOWER
or
TUB
The Haysco Diverting Valve
(Patented)
1. Ground joint valve seats on bot's Tub and Shower outlets.
2. Heavy wall lines with exposed parts heavily chrome plated. Brass throughout.
3. Renewable thread barrel packed with Jewett molded packing ring.
4. Large waterway areas to both shower and Tub.
5. Just loosen the outside bonnet to adjust handle to correct slight variations in setting.
6. Choice of trim material.

AT a FLIP

Flip the handle and the Shower is connected—reverse the flip and the Tub is connected—that's how simply and positively the patented Haysco Diverting Valve works. Use it, Mr. Plumber, to get more Shower business.

With the Haysco Diverting Valve you eliminate two handles and the necessary piping. You make a neater, more efficient installation at lower cost and give your customer a really fine shower unit at a saving to him.

The cross section view above shows the valve action—the rugged and simple mechanism that assures never failing action. Send for further details and be prepared to recommend the Hays Diverting Valve.

HAYS MFG. CO., ERIE, PA.

HAYS

DOUBLE SEAL CONNECTIONS

COPPER, BRASS & IRON PRODUCTS

Leakproof Shower Cabinets

A complete line of leak proof shower enclosures and receptors is manufactured by this 56-year old company. Integral and assembled shower cabinets as made by WEIS meet any requirement. Ask your jobber for a copy of Catalog 32 or write us direct.

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Established WEIS 1876
MANUFACTURING CO. INC.
ELKHART, INDIANA

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WATER SYSTEM

400 G.P.H. $89.00
BRAND NEW—
COMPLETE WATER SYSTEM WITHIN A SINGLE TANK!

The radically new design of air-volume control is combined with the suction strainer in a simple rugged unit. High grade diaphragm check with brass seat. Strainer screen readily accessible.

Motor and Pump Assembly quickly and easily removable through top of tank without disturbing any piping connections. Furthermore, the complete motor is then instantly detachable from the pump shaft.

Worthy of special note is the absence of the usual pump Packing Gland and the annoyances and leakages caused by it. There is no packing gland!

FIG. 8763—25 25-GALLON TANK

Write for Bulletin No. 98 for Complete Description

DECATUR PUMP COMPANY DECATUR ILLINOIS

the waste matter that passes through plumbing systems is concerned, in any part of this country and all waste pipe stops up at some time. Double duty pipe is not practical, and it is impossible for it to work out well, if its diameter changes.

I agree with you that crown venting was tried and found wanting. I also agree with you that all in all, plumbing is the result of years of experience by plumbers. That is correct. As a matter of fact, at times in the discharge of water in buildings it is as necessary to take away excessive air pressure as it is to supply sufficient air pressure. At some locations in plumbing piping systems it is as necessary to take away excessive air as it is at other times to supply sufficient air.

This question was started because the plumbers of the country seemed to be divided on what is the proper system of venting. We all agree that venting is necessary. I believe that all of the plumbers should agree on one system but I do not believe that the double duty pipe system is the proper one. I think there should be a distinct waste pipe and a distinct vent pipe as both have their work to perform and very important work. The advocates of loop or circuit venting (or whatever you might call it) say that the loop vent system can be supplied with additional vents to guard the seal of the trap. It has been my experience that the individual vent pipe is about as cheap as the loop or circuit vent. I believe that every plumbing code in the country should contain a paragraph which would state that the seal of every trap should be protected against back pressure or syphonic action by an individual vent pipe, and that vent pipe should not convey any water and should be a one duty pipe just for the purpose of supplying air.

VENTING IS NECESSARY

In New York City there is a doctor who writes for some of the daily papers. Recently he made a statement in one of the papers, which statement was published throughout the United States, that it is not necessary to vent and that plumbers are creating a great deal of work for themselves through venting systems. I had quite some correspondence with the doctor and I explained to him that in improperly vented plumbing systems sewer air would readily enter buildings. He contended that sewer air was not dangerous. However, he did admit that men who had entered street sewers and who inhaled sewer air (the same type of air that the residents of buildings would inhale in improperly installed plumbing systems) were overcome by the gas and lost consciousness. I explained to him that in addition to that some of the poor fellows had lost their lives. So the fact that he admitted that those men had lost consciousness when they entered the drain was an admission that if sewer air entered buildings it would be dangerous to the health of people either living or working in those buildings. He finally admitted that it was necessary to keep sewer air out of buildings. This is a serious subject and it can be solved only by plumbers.

Plumbing should be looked upon as a health measure and in my personal opinion should be under the supervision of the board of health in all towns and villages.

New York City. J. L. Murphy.

TRADE

NEWS OF PLUMBING AND HEATING CONTRACTORS

Master Plumbers Enlarge Association Services — Take Over Sales and Accounting Work of Plumbing and Heating Industries Bureau

E. B. Kleine, president of the National Association of Master Plumbers, announces that the National Association has taken over as of Dec. 1, 1932, all of the bookkeeping and sales promotion services formerly conducted by the Plumbing and Heating Industries Bureau.

These services include not only the bookkeeping and cost accounting system with its forms and blanks, but also the stock of textbooks known as the "Standard Text on Plumbing" and the "Standard Text on Steam-fitting," the advertising materials, and the sales manual materials.

"All of the Bureau activities taken over by the National Association will be administered from the office of the National Association of Master Plumbers, 15th and H Streets, N. W., Washington, D. C.," says President Kleine.

"A contract for the transfer of these materials from the Bureau to the National Association of Master Plumbers was signed at a meeting of the board of directors of the Plumbing and Heating Industries Bureau at the Stevens Hotel, Chicago, on November 28.

"This contract specifically provides that all Bureau services taken over by the National Association shall be made available to all plumbing and heating contractors in the United States on the same basis as they were formerly administered by the Bureau.

"The National Association of Master Plumbers wishes to emphasize the point that it is enlarging the scope of its activities but is not limiting the sale of accounting materials to members of the National Association of Master Plumbers.

"It is not to the best interests of the National Association, for instance, to restrict the sale of bookkeeping and cost accounting materials to members of the National Association of Master Plumbers.

"In the opinion of your national officers, every master plumber in the United States, whether he be a member of our National Association or not, should have a set of books that will tell him accurately his gain or loss on every job and which will give him accurate monthly statements on the condition of his business.

"The officers of the National Association further are of the opinion that many of the Bureau services will gain new vitality by being administered directly by the National Association.

"We have many state associations and over 250 local associations of master plumbers. Our close relation with the state and local associations will enable us to give wider distribution to the materials. We will administer them for the best interests of the plumbing and heating industries.

"The officers of the National Association believe that the Plumbing and Heating Industries Bureau, as now constituted, with its three objects of publicity, Department of Commerce contacts, and a common meeting ground for the three branches of the industries, is on a sound basis, both from the point of view of finances and practical service.

"The budget for 1933 adopted by the Board of Directors is a nominal one, namely $12,000. The National Association of Master Plumbers will continue to give both its moral and financial support to the Bureau. Manufacturers have pledged their continued support. An effort will be made to obtain a minimum subscription of $10 from every wholesaler in the United States.

"The publicity services of the Bureau alone are worth more than $10 to every wholesaler in the United States. It is the earnest wish of the officers of the National Association of Master Plumbers that the Bureau, which represents the idea of co-operative effort of the three branches of our industries, be maintained. We urge all wholesalers in the United States to aid the contracting and manufacturing branches in insuring the continuance of the Bureau."

Hildebrand Is Named Executive Secretary of N. A. M. P.

By E. B. KLEINE

I am pleased to announce the appointment of Joseph G. Hildebrand as Executive Secretary of the National Association of Master Plumbers. Mr. Hildebrand is assuming his duties in the National Office at once. This appointment was made following the resignation of John F. Donovan who has been serving the membership of

our great national organization in this capacity for the past five years.

As announced recently, the National Association has assumed a number of the services that were formerly carried on by the Plumbing and Heating Industries Bureau. These services include the distribution of cost accounting materials, the sale of text books, and sales promotional material for the plumbing and heating contractor. It is felt, therefore, that the appointment of Mr. Hildebrand will serve a dual purpose. Supplying these materials and rendering these services will be continued from the permanent office in Washington as rapidly as the materials can be transferred to that city.

In extending the continuation of the Bureau services directly by the National Association, we feel that we have greatly strengthened our organization. Plumbing and heating contractors now will be able to secure directly from the National Association the various forms, accounting, and sales promotional helps that were formerly rendered by the Bureau. We are confident that this direct contact with our membership will strengthen our position in the industry. We believe that these are services that should be rendered directly by our organization.

Mr. Hildebrand's appointment as the new Executive Secretary of our Association follows his twenty-one years of service in the plumbing and heating industries. He began in the plumbing business as an apprentice and has served successively as journeyman, master plumber, salesman for a wholesaler, and for five years managed two wholesale and manufacturing companies in Pennsylvania. Before he joined the Bureau staff in 1930, he was field-man for the Pennsylvania State Association of Master Plumbers and now holds an honorary membership in the Susquehanna Valley Master Plumbers Association of Pennsylvania. While with the Bureau, he organized and directed the regional management conferences which were a unique contribution to education in salesmanship.

Bureau Board Appoints Radder, Secretary-Manager

Articles on plumbing and radiator heating written by the Plumbing and Heating Industries Bureau had a total circulation of more than 150,000,000 during the first eleven months of 1932, it was reported to the board of directors of the Bureau at a meeting at the Stevens Hotel, Chicago, on November 28.

The board met to review the Bureau's services to the plumbing and heating industries during 1932 and to plan the activities for 1933.

It was the unanimous opinion of the board that the publicity work in newspapers and magazines should be continued during 1933 with particular emphasis on the modernizing of plumbing and heating equipment.

The board voted to continue the contact with the United States Department of Commerce which has resulted in the establishment of a Plumbing and Heating Products Unit in the Department of Commerce.

This unit will correlate and coordinate the vast amount of data gathered by all the various branches of the federal government pertaining to the plumbing and heating industries.

"This service, which has been enjoyed by a number of industries for some years, now brings to our industries the machinery whereby every branch through its respective association in co-operation with the industry as a whole can develop general and specific services along many lines of market research and merchandising," the board explains in a statement to the industry.

"A closer relationship between our industry and the research, fact-finding, and statistical agencies of the federal government is desirable.

Joseph G. Hildebrand, Executive secretary, National Association of Master Plumbers

Norman J. Radder, Secretary-manager, Plumbing and Heating Industries Bureau

"The United States Bureau of Standards, which is part of the Department of Commerce, has a hydraulic laboratory which is the greatest laboratory of its kind in the world for making tests of interest to our industries.

"The Division of Building and Housing has a vast amount of data on building codes and their enforcement. The Census Bureau has many facts and figures of value in marketing work. The Bureau of Foreign and Domestic Commerce can be of great assistance to us.

"The extent to which this service becomes available and effective, depends upon the degree of co-operation we receive from units in all branches of the industries."

Board members who attended the meeting were: P. W. Donoghue, Boston, past president of the National Association of Master Plumbers, who is president of the Bureau; Charles K. Foster, executive vice-president of the American Radiator & Standard Sanitary Corporation; H. W. Seymour, vice-president of Crane Co.; William Scudder, vice-president of the American Radiator Co.; C. W. Wanger, president of the Woodward-Wanger Co.; E. B. Kleine, president of the National Association of Master Plumbers; Robert J. Barrett, vice president of the National Association of Master Plumbers, George H. Drake, past president of the National Association of Master Plumbers; Harry M. Hart, past president of the Heating and Piping Contractors National Association; Russell G. Creviston, sales promotion man-

ager of Crane Co.; William J. Spillane, sales manager of Jas. B. Clow & Sons; W. K. Glen, divisional sales manager of Crane Co.; and Harry Beglen, vice president of the Standard Sanitary Mfg. Co., who represented H. M. Reed, president.

George E. Hoffman, manager of the plumbing fixture sales department of Crane Co., was elected a member of the Bureau's board of directors.

President Donoghue appointed a committee for the purpose of studying the financing, activities, and the organization of the Bureau. The committee consists of Mr. Spillane, chairman; Mr. Creviston, Mr. Hart, Mr. Kleine, Mr. Scudder, and Mr. Wanger.

The board voted to transfer all Bureau materials relating to bookkeeping and advertising to the National Association of Master Plumbers. These materials will hereafter be available to the trade from the headquarters of the National Association of Master Plumbers, 15th and H Streets, N. W., Washington, D. C. The contract entered into by the board of directors of the Bureau and the National Association of Master Plumbers specifically provides that these services are to be made available to all plumbing and heating contractors in the United States.

The Board accepted the resignation of Joseph G. Hildebrand as secretary-manager of the Bureau. Mr. Hildebrand, who will join the Washington office of the National Association of Master Plumbers, was appointed by the board to represent the Bureau in Washington in contacting the Commerce Department.

Norman J. Radder, who joined the Bureau staff in 1928 as publicity director and under whose direction the publicity program of the Bureau has been carried on, was appointed secretary-manager to succeed Mr. Hildebrand.

A budget of $12,000 was adopted for 1933. Manufacturer members of the board and representatives of the National Association of Master Plumbers pledged their financial support. The board voted to make an active solicitation of wholesaler support on the basis of an annual subscription for the Bureau of $10 a year.

Plan Big Meeting at Detroit

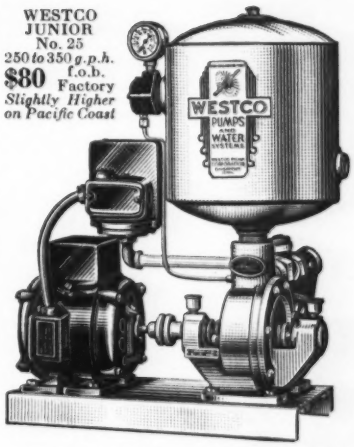
Master plumbers of Detroit and surrounding cities will hold an open meeting at the Fort Wayne Hotel, Detroit, on the evening of Dec. 8.

Edward Frank of Cincinnati, secretary of the National Association of Master Plumbers, will preside. The speakers will include National President E. B. Kleine, and Past National President John J. Vogelpohl, both of Cincinnati, and Joseph G. Hildebrand, executive secretary of the National Association of Master Plumbers. William A. Johnson of Kalamazoo, secretary of the Michigan state association, has been active in arranging for this meeting.

Fix Dates for Next Convention of N. A. M. P.

The National Association of Master Plumbers will hold its 51st annual convention and exposition in New Orleans, La., June 19, 20, 21 and 22, 1933, according to announcement just issued by President Edward B. Kleine and Secretary Edward Frank of Cincinnati, Ohio.

WESTCO JUNIOR
No. 25
250 to 350 g.p.h.
$80 f.o.b. Factory
Slightly Higher on Pacific Coast



WESTCO JUNIOR
Turbine-type
WATER SYSTEM
100% Automatic
and Self-priming

DEALERS CONTINUE TO MAKE MONEY
selling WESTCOS

No short discounts—your full profit protected

No short discounts—exclusive dealer franchise—freedom from expensive service trips are reasons why dealers continue to make money selling the Westco Line.

Outstanding performance—money-back guarantee—low prices and extra value are reasons why people are now buying Westcos. It's easy to be the leading water system dealer in your community with the Westco Line.

New Patented Feature

Patented *Removable Liners* are the latest Westco operating and selling feature. These *Liners* allow the capacity to be increased or decreased without disturbing the installation. They also protect the pump casings from any possible wear and insure lifetime service for the casings.

This is a powerful selling aid because these *Removable Liners* can easily be replaced if they should be subjected to severe wear due to foreign matter entering the pump chamber. Thus by simply replacing the *Liners* the pump can be made as good as new. This job costs but little and can be done quickly on the premises.

Other Features

All Westcos have Automatic Air Volume Controls; are Self-priming and quiet in operation. They are absolutely free from "water hammer" and pounding in the pipes. Successful operation guaranteed on suction lifts as high as *28 feet*. Lubrication necessary *only once a year*. Attractively finished in green and black.

Sizes Available

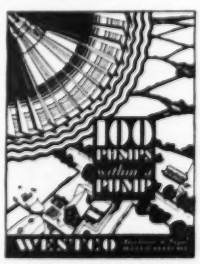
Westcos are built in a complete range of sizes with capacities from 250 to 3,000 gallons per hour. Electric motor or gasoline engine driven.

Disassembled view showing Westco's patented Removable Liners, Impeller and Casings

Do It Now!

Remember Westco franchises are EXCLUSIVE. Act now! Sign the coupon below and *mail today* for FREE colorful Catalog and new, low Price List.

Westco Pump Corporation, Davenport, Iowa. *Branches:* New York, Philadelphia, Chicago and San Francisco. *Jobbers in 50 Principal Cities.*



COUPON *BRINGS* CATALOG

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Gentlemen: Without obligation please send me FREE Westco Water System Catalog and Price List.

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City.....
State.....

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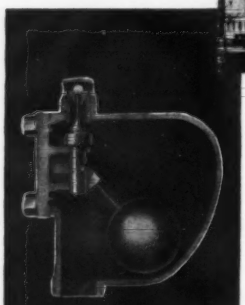
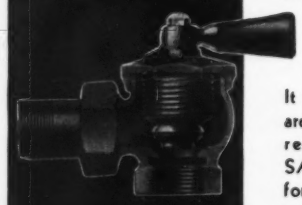
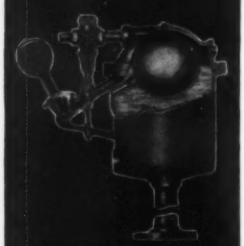
Canadian National Hotel Vancouver, B. C. Sarco Equipped Throughout



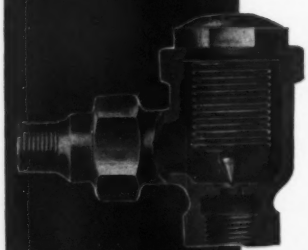
Air Eliminator



Inlet Valve



Alternating Receiver



Radiator Trap

The Heart of the Building is the Heating System

The continued popularity of any building rests on the effective operation of the heating system, perhaps more than on any other single factor. And uniform heating depends on the effective operation of a scientifically designed heating system.

It is for this reason that leading architects and engineers give such repeated preference to the SARCO Heating System, which for many years has proved its absolutely dependable operation and durability.

The Sarco Heating System is built to conform to a high standard of performance and not to sell at a price.

It is a quality system through and through. Operates noiselessly and economically.

Without obligation we will gladly help work out your heating problems. Write for Catalog M-45.

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SARCO
Heating System

National Officers Visit Louisville, Ky.

Early in November, National President Edward B. Kleine, National Secretary Edward Frank and Past National President John J. Vogelpohl drove from Cincinnati, O., to Louisville, Ky. There they were met by John M. Wilbers, Kentucky state president, Albert F. Hirsch, state vice president, and O. H. Mitzlaff, state secretary-treasurer, and escorted to the rooms of the Louisville Master Plumbers Association where they addressed a well attended meeting of the local association. Carl Spies, president of the Louisville association, presided. The national officers were introduced and each in turn spoke on national association affairs, urged membership drives and discussed sales policies that are being used in the industry today.

President Wilbers and Past President Jacob Isaacs also spoke. Several members of the Women's Auxiliary were presented to the members.

National President Kleine and his associates were given a great welcome at the meeting and the large attendance was a credit to the association. The visitors were entertained after the meeting by the local members.

Illinois Master Plumbers to Meet Jan. 17-19

The Illinois Master Plumbers' Association will hold its next annual convention on Tuesday, Wednesday and Thursday, January 17, 18 and 19, 1932, at the Congress Hotel in Chicago.

Henry P. Reger of Chicago, president of the association, has appointed several committees to take care of the convention.

Among the outstanding subjects which will be presented and discussed at the convention are: 1. Merchandising of plumbing and heating materials on a basis that will give the contractor a reasonable profit. 2. Competition of utilities in merchandising gas-fired equipment. 3. Interpretation and application of credits by wholesalers.

Southern California Federation Re-Elect Officers

Delegate members of the Southern California Federation of Merchant Plumbers, at a recent meeting in Merchant Plumbers' Hall, Los Angeles, Calif., voted to retain their officers for the succeeding twelve months. Re-elected were William Nies, Los Angeles, president; Thomas Hogan, Los Angeles, first vice president; Howard Swihart, Pasadena, second vice president, and F. D. Reed, Los Angeles, third vice president. Under the federation system, each of the officers will preside over federation meetings for a three months' term.

Decision was also made at the meeting to discontinue open meetings until a pick-up in the building industry occurs. Delegate sessions will continue to be held each month.

California Master Plumbers to Meet at Los Angeles Next Year

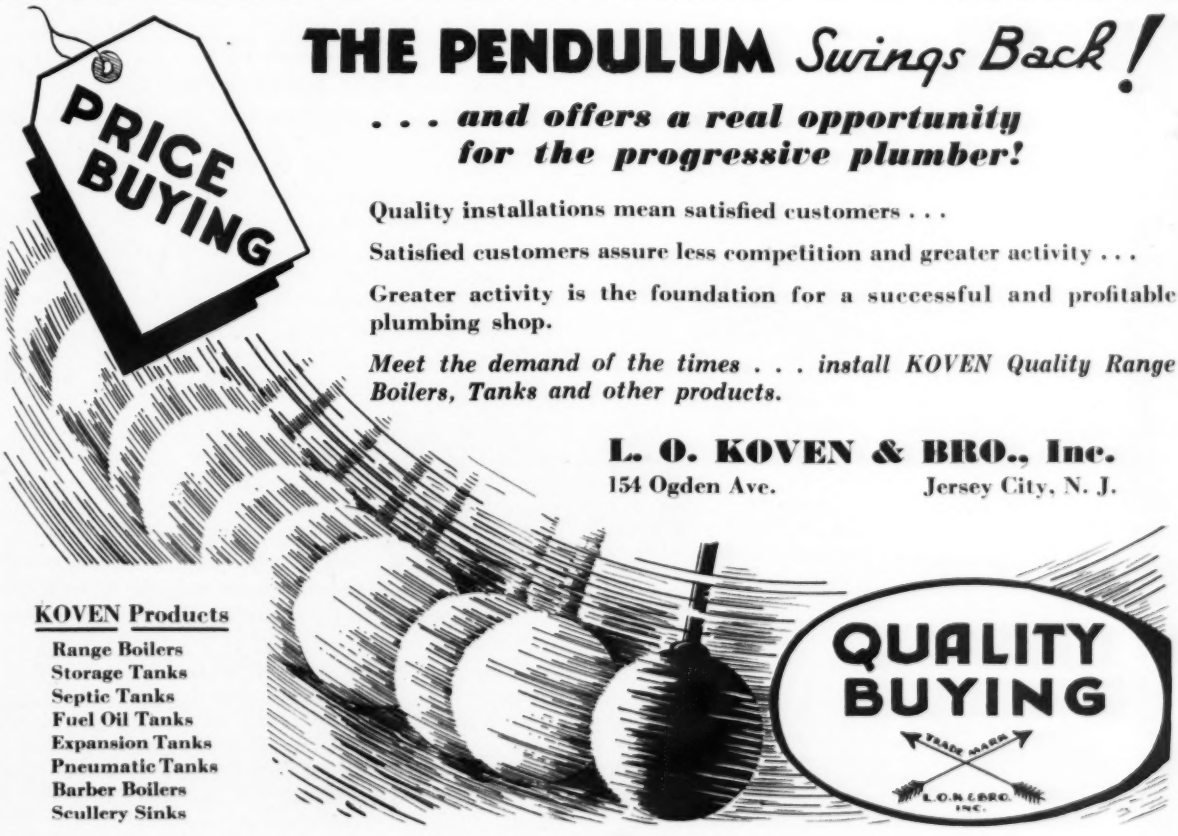
The next annual convention of the State Association of Master Plumbers of California will be held at Los Angeles May 22, 23 and 24, 1933. This was the recent

The annual banquet at the recent convention of the Ohio Master Plumbers' Association

decision of J. D. Speer, of Santa Barbara, president, and John M. LaDieu, executive secretary, following an informal poll of association directors in Southern California. The convention was originally scheduled for Santa Barbara with the election of Mr. Speer at the 1932 convention in Oakland last May. Officers and directors felt, however, that Santa Barbara did not offer the possibilities for a full-rounded program of business and entertainment that did the larger city.

Preparing Plans for Wisconsin Master Plumbers' Convention

Educational talks and numerous round-table discussions are scheduled for the annual convention of the Wisconsin Master Plumbers' Association this year, to be held at the Pfister Hotel, Milwaukee, on January 25 and 26. It is planned to hold a two-day convention, instead of the customary three-day session, with discus-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. . . and offers a real opportunity for the progressive plumber!
Quality installations mean satisfied customers . . .
Satisfied customers assure less competition and greater activity . . .
Greater activity is the foundation for a successful and profitable plumbing shop.
Meet the demand of the times . . . install KOVEN Quality Range Boilers, Tanks and other products.
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Repairs Cracked Boilers Permanently!

EQUAL IN QUANTITY to 2 QUARTS of LIQUID!

Make one BOILER SOLDER SEAL repair for your customer—save him the cost of a new section just once, and you have a customer that will be a profitable investment as far as future business is concerned.

BOILER SOLDER SEAL does not permit of a heating plant shut-down. Just as soon as the leak makes its appearance, in goes BOILER SOLDER SEAL. The leak is a thing of the past and the heating plant goes merrily on.

No waiting for a new section. No great outlay of money. And the cost of the repair is negligible.

Write for full details NOW

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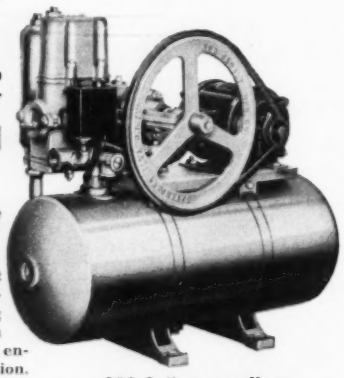
MANUFACTURERS OF W J BOILER AND HEATING SYSTEM CLEANSER — "IT VAPORIZES"

TRADE SOLDER SEAL MARK

$42.50 Complete to the Consumer

the Lowest Priced Shallow Well System On The Market Today



HERE, Mr. Dealer, is what you have been waiting for — a shallow well reciprocating type water system, at such an amazingly low price, as will enable you to meet all competition. There isn't any other unit which is priced to the consumer at such a low price. And, don't forget — the unit is made and guaranteed for quality and performance by the Red Jacket Manufacturing Company, makers of pumps and water systems for 57 years.

250 Gallons per Hour

This outfit delivers 250 gals. per hour from well or cistern up to 22 ft. in depth. Plenty of water for kitchen, bathroom, laundry, stock troughs, etc.

A Big Special Feature

A big special feature of this pumping unit is the Water Lubricated Bearings which require no oil. This means no piston rod stuffing-box leakage; no oil polluted water in pumping system; no water polluted oil in crankcase. ¼ H. P. Motor, 110 single phase motor. Pressure Switch; Relief Valve; Galvanized Tank, 8-gal. size; "V" Belt Drive. Everything complete.

This system is priced to sell under present conditions with a margin of profit you will appreciate. *Write for discounts and complete information.*

DORWARD-Red Jacket WATER SYSTEMS & Deep Well Power Heads

RED JACKET MFG. COMPANY
DAVENPORT, IOWA.

sions "from the floor" of several problems affecting the trade.

Plumbers in attendance from throughout the state will tell of how they have met the problems of the depression-period, according to Peter King, executive secretary of the Milwaukee Master Plumbers' Association.

On one of the two days of the convention, the policy-holders of the Master Plumbers' Mutual Liability Company will hold their annual meeting, present tentative plans provide.

The Wisconsin Apprenticeship conference, held each year on the day preceding the convention of the Wisconsin Master Plumbers' Association, so that delegates may attend the sessions of that organization, is scheduled to be held at the Pfister Hotel on January 24, 1933.

Missouri Directors Hold Fall Meeting

The board of directors of the Missouri State Association of Master Plumbers held their regular fall meeting at the Green Tavern Hotel in Springfield, Mo., on Saturday, November 19. The following members were in attendance: President J. J. Lawler, Springfield; F. J. Murphy, first vice president, St. Louis; E. F. Spaeth, second vice president, Kansas City; J. F. Corrigan, treasurer, St. Louis; Carl R. Smith, Kansas City; Fred O. Hamm, Joplin; H. J. Morrison, Poplar Bluff, and C. D. Dunlap, secretary, Springfield.

H. B. Schulte of Joplin also attended as a visitor.

The board discussed the possibility of securing the passage of a state plumbing code at the next session of the state legislature. It was decided that the next annual convention of the state association is to be held April 17 and 18, 1933, at a city to be announced later.

Cincinnati Master Plumbers Elect Officers

The Cincinnati Master Plumbers' Association held its annual election of officers in the Masonic Temple in that city on Saturday afternoon, November 12. The nominating committee in charge of the election proceedings consisted of John R. Hirth, chairman; R. J. Cluxton, James Fay, John Merkel N. G. Herzer and Ray Wetzel.

The following officers were elected for the ensuing year: President, Bernard Walterman; vice president, Raymond Markus; secretary, Harold McDonald; treasurer, Harry Niemes; sergeant-at-arms, Alois Padur; board of directors: James Doud, John Doherty, Sr., and John Williams.

After the election, a chicken dinner was enjoyed by a large number of the members of the association in one of the dining rooms of the Masonic Temple. John Doherty, Sr., retiring president, acted as toastmaster and introduced the principal speaker of the evening, Edw. B. Kleine, president of the National Association of Master Plumbers, who delivered a good address on "Present Conditions in the Plumbing Industry," which he closed with an urgent appeal to his hearers for their co-operation in increasing the membership and in bettering conditions in the industry.

President Kleine's address was followed by short talks by the newly elected officers as well as the retiring officers. The latter were: Edward Frank, treasurer, and also national secretary; John J. Vogelpohl and Wm. C. Tillett.

CONVENTION DATES

December 5-10, 1932.—The 10th annual Exposition of Power and Mechanical Engineering, at Grand Central Palace, New York City.

December 7, 8 and 9, 1932.—A. S. R. E.—The 28th annual meeting of the American Society of Refrigerating Engineers, in New York City, with headquarters at the Hotel New Yorker.

January 17, 18 and 19, 1933—ILLINOIS—The annual convention of Illinois Master Plumbers' Association, in Chicago, with headquarters at the Congress Hotel.

January 23, 24 and 25, 1933.—A. S. H. V. E.—The thirty-ninth annual meeting of the American Society of Heating and Ventilating Engineers ,at Cincinnati, Ohio, with headquarters at the Hotel Gibson.

January 25 and 26, 1933.—WISCONSIN.—The annual convention of the Wisconsin Master Plumbers' Association, at Milwaukee, Wis., with headquarters at the Pfister Hotel.

February 7 and 8, 1933.—OHIO—The 42nd annual convention of the Ohio State Association of Master Plumbers, at Akron, Ohio, with headquarters at the Netherland Hotel.

April 17 and 18, 1933.—MISSOURI.—The annual convention of the Missouri State Association of Master Plumbers, name of convention city to be announced later.

May 22, 23 and 24, 1933—CALIFORNIA—The annual convention of the State Association of Master Plumbers of California, at Los Angeles, Calif.

June 19, 20, 21 and 22, 1933.—N. A. M. P.—The 51st annual convention and exposition of the National Association of Master Plumbers, at New Orleans, La.

Officers for Local Associations

GLENSIDE, PA.—Lower Bucks & Montgomery County Association of Master Plumbers: President, Stewart B. Rover, Ambler, Pa.; vice president, J. Irwin Ritter, Glenside; secretary, James P. McEntee, Glenside; treasurer, L. C. Madsen, Willow Grove.

OLYPHANT, PA.—Lackawanna Valley Master Plumbers' Association: President, James F. Arthur, Dickson City, Pa.; vice president, Thomas L. Williams, Jermyn, Pa.; secretary and treasurer, James H. Lally, 112 Lackawanna street, Olyphant.

GLEN ELLYN, ILL.—Plumbing and Heating Contractors' Association of Northern Du Page County: President, Herman A. Rieser, Wheaton; secretary and treasurer, Edw. E Wiesbrook, Glen Ellyn.

HOOPESTON, ILL.—The Master Plumbers' Association: President, Clarence W. Murray; vice president, M. C. Leigh; secretary and treasurer, M. L. Fickle.

HAZLETON, PA.—The Master Pumbers' Association of Hazleton and Vicinity: President, C. H. Sherry; vice president, Norman Walck; secretary, Norbert R. Corrigan, and treasurer, Christ Henderscheidt.

CHESTER, PA.—Delaware County Master Plumbers' Association: President, James F. Rhoads; vice president, George Mitchell, Jr.; secretary, Horace W. White, and treasurer, Walter F. White.

ST. PETERSBURG, FLA.—Master Plumbers and Heating Dealers, Inc.: President, O. O. Blauvelt; vice president, C. J. Godsey; secretary and treasurer, Fred M. Quinlan.

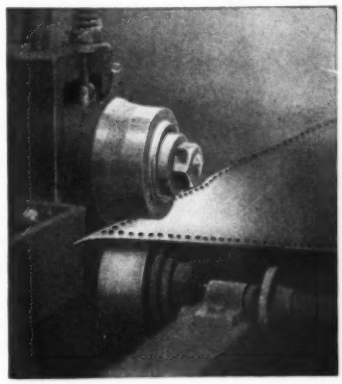
BELOIT, WIS.—Beloit Master Plumbers' Association: President, Daniel H. Osborn; secretary and treasurer, Robert T. Morrill.

PENNSYLVANIA RANGE BOILERS

Can't Leak at the Seams Because the

SEAMS ARE CRIMPED

along the meeting edges. Crimping eliminates the necessity of pulling the seams together by tack riveting or welding as the seam meets perfectly before fastening. No undue stress is placed on any part of the boiler.



Sold Thru Jobbers

Complete line of *All Welded* and *Riveted and Welded* Galvanized Boilers.

JOBBER: Write us for sample of any boiler for 30 day inspection.

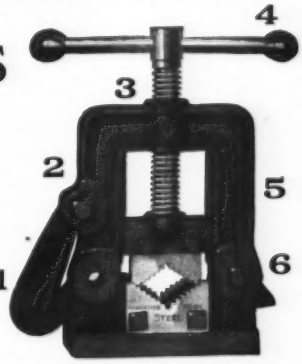
Pennsylvania Range Boiler Company

Established 1895

24th & Washington Ave. Philadelphia, Penna.

ARMSTRONG BROS.

PIPE VISES



6 features to look for when buying your next pipe vise

Here are six features to look for. Each is important. All can only be had in an ARMSTRONG BROS. Pipe Vise.

1. Drop Forged Steel Hook—absolutely unbreakable.
2. Certified Malleable Iron Frame.
3. Special Steel Screw with *double-wear thread*.
4. Oval End Handles—will not pinch hands.
5. Replaceable Tool Steel Jaws with *milled teeth*.
6. Quick-action Hinge—aligned, non-wobbling.

For handiness, strength and long life, specify ARMSTRONG BROS. Pipe Vises.

Write for Catalog P-10

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
323 N. Francisco Ave. CHICAGO, U. S. A.

Frank Reynolds Dies at 93

Frank Reynolds, a retired master plumber of New York City, died at his home in that city on October 27, in his 94th year. He was resting in his rocking chair when he expired, the victim of a heart attack. Mr. Reynolds was born in Ireland, and came to America when he was five years old. He learned the plumbing trade working for William Harris, who started him at two dollars a week. He was a charter member of the National Association of Master Plumbers and he also attended the first meeting of the Manhattan Master Plumbers Association. He was present last summer at the golden anniversary convention of the National Association of Master Plumbers, and he was delighted when the President invited him to come on the platform.

Death of Fred Schmalstich

Fred Schmalstich, secretary of the Bronx Association of Master Plumbers, died recently at the Fordham Hospital in New York City from injuries received four days before, when he was hit by an automobile just as he was about to board a bus on his way to a Greater New York Master Plumbers' meeting. Mr. Schmalstich was born in Bronx 60 years ago, and started to learn the plumbing trade at the age of 12. As a young man he was connected with Joseph A. McDonald and later with the Bryant & Crow Co. He went into business on his own account in 1906, when he joined the Master Plumbers' Association. From that time until his death he was very active in association affairs. He was president of the Bronx Association of Master Plumbers for seven years and delegate from zone 2 of the New York State Association of Master Plumbers for six years, during which period he succeeded in organizing many associations in his district and in getting many master plumbers to join the association. He retired from business a few years ago in order to give all his time and energy to his work as secretary for the Bronx Association.

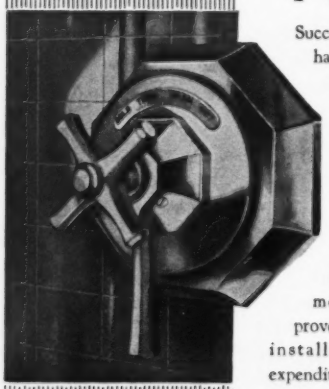
Chester C. Southern Dies

Chester C. Southern, Fort Wayne, Ind., plumbing and heating contractor, passed away recently after several weeks' illness. He was an active member of the Fort Wayne Merchant Plumbers' Association and his loss has been keenly felt. Mr. Southern, who was 51 years old, is survived by his wife, two sons and two daughters. The business is being carried on by his sons.

Celebrated His 75th Birthday

H. E. Hertner of the plumbing and heating firm of H. E. Hertner & Son at Amarillo, Tex., celebrated the 75th anniversary of his birthday on September 29. Members of four generations of his family attended the celebration. Mr. Hertner has a nephew who is widely known in the plumbing industry, namely Wm. J. Hebenstreit, sales manager of the Standard Sanitary Mfg. Co.'s branch in St. Louis, Mo.

Fits in with
MODERNIZATION
Programs



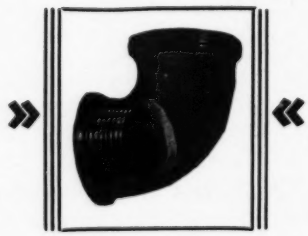
Successful plumbing dealers have not been stopped by the fact that the general market for their activities is timid in regards to complete new installations — they are going after business that does exist — that can be obtained with such commodities that offer improved conditions on existing installations—without the expenditure incidental to an entirely new job.

On such a basis, Leonard Water Mixing Valves have a running start. Because of their accuracy of operation they increase efficiency of present jobs. Write for complete details now.

LEONARD Water Mixing VALVES

LEONARD - ROOKE CO.
Incorporated 1913
PROVIDENCE RHODE ISLAND

PIPE FITTINGS

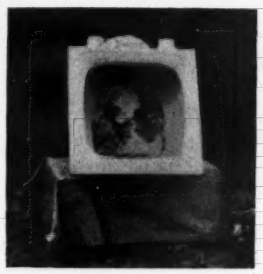


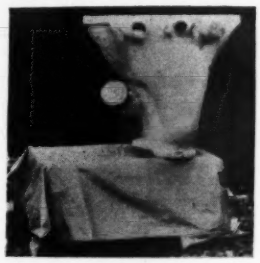
Clean threadways—Tapping to gauge—Absence of sand holes—all go to distinguish—IMICO—Fittings.

A full line in malleable iron, cast iron and brass.

Also manufacturers of brass and iron valves.

ILLINOIS MALLEABLE IRON CO.
Chicago, Ill.
MANUFACTURERS OF BRASS AND IRON VALVES





Top view, side view and rear view of the closet in question

When and Where Was This Closet Made?

FOLLOWING the appeal on Page 137 of our November issue to readers of DOMESTIC ENGINEERING for information about when and where the old closet was made, which Foster R. Fanning of Winter Park, Florida, replaced last spring, the Editor of DOMESTIC ENGINEERING has received many letters. Some of these are so interesting and contain so much valuable information that a perusal of them no doubt will be enjoyed by many of our readers. They all tend to prove that this old closet, which the accompanying pictures illustrate, was made nearly fifty years ago in this country.

With hearty thanks to these readers for their efforts to solve Mr. Fanning's problem, we take great pleasure in publishing their communications herewith:

To the Editor:

Regarding information about the closet bowl on page 137 of your November issue, my attention was called to this some days ago by Mr. P. R. Berryman, vice president in charge of sales, and I remembered the closet and we located it as having been made at our Delaware plant. Mr. Berryman investigated it still further and is going to write you today telling you the results of his investigation. I hope the information he gives you will be what you desire.

Glad to serve you.

Yours very truly,
THE TRENTON POTTERIES CO.
John A. Campbell,
Trenton, N. J. Chairman of the Board.

To the Editor:

Mr. Campbell has asked me for historical information regarding the square top No. 2 washout mentioned on page 137 of your November issue, and I have just finished some interesting research on this very question.

After consulting all the old-timers around here, there is little doubt but that this piece was made either in our Delaware or Enterprise Pottery between 1885 and 1895. Although the photograph is rather indistinct, the embossed design leads us to believe that it was made at our Delaware pottery for the old Henry Huber Company of New York City. Their trade name for this particular piece was "the Flume Closet" and we made them both the square Flume and the round Flume bowl. There are still several men with us who made this fixture for us in those days.

Unless it is possible for the owner of this particular closet to find a date stamped on the piece, either on the underside of the foot or perhaps on the back of the trap, I doubt if it is possible for any one to determine the exact date it was made. About the best way to make this guess is to figure out the age of the building from whence it came and then add six months or a year for making and warehousing.

Mr. William M. Allen of the Mott Co. of Pennsylvania guessed almost right when he said that it was designed by R. H. Watson of Philadelphia. However, Mr. Watson's patented closet featured the venting of the bowl through an extra large flushing rim, whereas it would appear that the one in the photograph has the vents going directly into the bowl under the rim. They certainly had a venting complex in those days, as you will notice from the picture that not only did they vent the trap but also had two local vents in the back under the rim, one of which was usually plugged up as in this particular case. In fact, it was a common practice to plug up a vent with clay and plaster before shipping from the factory.

I hope this furnishes the information desired. I am sorry we can't give a more definite answer regarding the exact date the fixture was made.

Very truly yours,
THE TRENTON POTTERIES CO.,
Paul R. Berryman,
Trenton, N. J. Vice President.

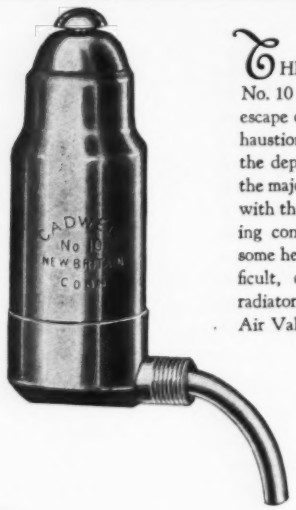
To the Editor:

I have in front of me an old Haines, Jones & Cadbury Catalog "E" which was published in 1890. In it is illustrated a square top embossed closet similar to the one which you show in your November issue. The catalog shows it with the embossing traced in gold and also in just the plain embossing. It was known as the "perfection" closet and we sold quite a good many of them.

The fact that this closet was illustrated in a catalog of 1890 would indicate that they had been selling it before, but I think it would be fair to assume that the closet

CADWELL

NO. 10 AIR VALVES



THE quick action of CADWELL No. 10 Air Valves in preventing the escape of steam and allowing the exhaustion of air from the radiator and the dependability of this action, are the major reasons for their popularity with the most discriminating of heating contractors. If you are finding some heating system particularly difficult, due to the non-heating of radiators, try CADWELL No. 10 Air Valves.

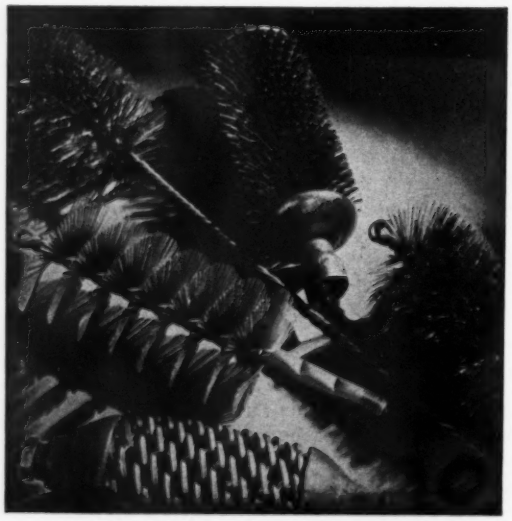
Get them from Your Jobber

The BEATON & CADWELL MFG. CO.
Established 1894
NEW BRITAIN, CONN.

Boiler Tube Cleaners, Flue Brushes, Wire Heater Brushes, Handy Cleaner Brushes, Fire Brooms, Track Brooms.

Tempered Steel

MADE FOR LONG RUGGED SERVICE



The Worcester line is complete.
Catalog gladly sent upon request.

WORCESTER BRUSH and SCRAPER CO.
10 AUSTIN STREET :: WORCESTER, MASS.

which Mr. Fanning of Winter Park replaced was possibly between 45 and 50 years old.

Both Mr. Benjamin Cadbury and I remember this type of closet.

Very truly yours,
HAJOCA CORPORATION.
J. Harvey Borton,
Philadelphia, Pa. General Manager of Sales.

To the Editor:

Since writing you yesterday, I learned that we had a letter recently from the James Purcell Plumbing and Heating Company of Erie, Pa., stating that they were called in on a job at the Old Government Custom Building in Erie to do some repair work. The closet they said bore the trademark of Haines, Jones and Cadbury Company and the markings "Patented November 17, 1885." They described this as a square top bowl and evidently similar to the one shown in the article in your November issue.

You might be interested in getting in touch with the James Purcell Plumbing and Heating Company of Erie and getting some further details from them.

It is rather interesting to see that one of these closets is in the northern part of the United States and the other in the southern. It shows what a wide distribution there was of this type of closet 45 years ago.

Very truly yours,
HAJOCA CORPORATION.
Philadelphia, Pa. J. Harvey Borton,
General Manager of Sales.

To the Editor:

I note in your November issue of DOMESTIC ENGINEERING, on page 137, illustrations of an old time closet bowl.

I am enclosing a cut of the Sanitas water closet, which is somewhat similar to the bowl as shown.

I have lately had occasion to replace one of these Sanitas water closets and the date of the closet bowl was 1883, which would make the closet forty-nine years old.

Trusting this will be of interest, we remain

Very truly yours,
LOCKE STEVENS & SANITAS, INC.
Boston, Mass. By W. W. Ferguson.

To the Editor:

Regarding the embossed square top back outlet water closet bowl which Mr. Foster R. Fanning of Winter Park, Florida, inquired about in your issue of November, 1932, would say that the writer recalls this item made between the years 1880 and 1885 by Charles Harrison & Sons, formerly of Great Jones street, New York City.

We believe the patent office would show that the square top bowl, both in hoppers and washouts, was patented by them and we think that they were originally made by Crescent Pottery Co. of Trenton, N. J., later absorbed by the Trenton Potteries Co.

At this period most of the earthenware was imported from England, principally made by T. C. Brown, Westhead, Moore & Co., in Staffordshire.

The local vents, however, were principally used in

Boston and New England, and while some of them were sold in Philadelphia, very few were used in this market.

The bowls were improved later on and made in pedestal form with seat attachment, sold principally by the Henry Huber Co. of New York and the Meyer, Sniffen Co. of New York, but the demand was very limited and these fixtures soon dropped out of sight altogether about the year 1895.

The last concern we knew of that advertised this pattern was the Cooper, Jones and Cadbury Co., Philadelphia, Pa.

Very truly yours,
Export Plumbing Supply Corp.,
(Signed) H. H. Sommer, President.
Woodside, N. Y.

To the Editor:

Since writing you on November 14th, the writer has discovered the exact counterpart of the square top washout closet in question, as you will note by the enclosed sheet of the E. S. Wheeler & Co., of New Haven, Connecticut, catalogue of 1891, figure No. 714.

As the writer recalls, this bowl was made by either the Empire Pottery Co., or the Equitable Pottery Co., or the Crescent Pottery Co. all of Trenton, N. J., and merged into the Trenton Potteries Co. later on.

We believe that the Trenton Potteries Co. may find in their files about this date some of the catalogs showing this design, but there is no question regarding the approximate date of the manufacture being between 1888 and 1891.

Very truly yours,
Export Plumbing Supply Corp.,
Woodside, N. Y. H. H. Sommer, President.

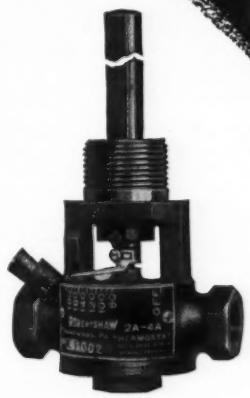
University of Wisconsin to Offer Course in Sewage Plant Operation

Master plumbers in Wisconsin, especially in the smaller towns, are expected to take advantage of a course to be offered in January, 1933, by the University of Wisconsin relating to sewage plant operation. The course is particularly timely at present, inasmuch as many small cities in Wisconsin are combining the duties of sewage disposal plant operator with that of the city plumbing inspector, and licensed plumbers are usually chosen for this job.

The course will be divided into ten general divisions. These are practical work in the laboratory, and demonstration lectures with discussions. The general theory of sewage treatment, describing in detail the function and method of operation of the various parts of the sewage plant will be one of the topics studied, and other topics include typical operating difficulties and how to overcome them, care and maintenance of pumps, and various devices for measuring quantities of sewage.

Those who will give demonstration lectures, lead the discussions and conduct the laboratory work during the week course are L. F. Warrick, state sanitary engineer; Dr. M. Sarr Nichols, state hygienic laboratory; Professors L. H. Kessler and F. M. Dawson, and Instructor H. E. Ruf, of the department of hydraulics and sanitary engineering of the United States.

ROBERTSHAW
THERMOSTATS
for
EVERY
USE

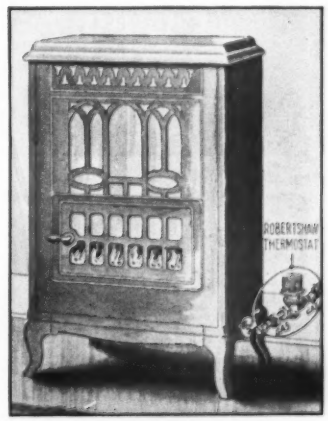


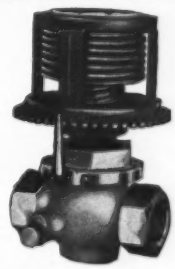
THROTTLING TYPE for Side Arm Water Heaters or Automatic Storage Water Heaters. All sizes from ⅜ to 2 inches. Robertshaw Throttling Type Water Heater Thermostats are fully covered in CIRCULAR FORM R-4.

SPACE
HEATER
THERMOSTAT

Automatic control is just as essential in the space heater as it is in the gas range or gas furnace. The Robertshaw can be used with every gas fired space heater . . . new or old . . . and enables you to add extra profits to every installation.

The No. 2E Robertshaw, developed especially for space heater use, is easy to install, positive and dependable. It is small, compact, and attractively finished. Be sure you have the complete data on this much needed thermostat.





WRITE
for these
circulars . . . no
obligation . . . and have
the last word on thermostats
ROBERTSHAW THERMOSTAT CO.
Youngwood, Penna.

Threads, while occupying but a small part of each length of pipe, play a very important part in installation. If they fit easily, the job moves ahead rapidly—if trouble results from faulty threads, time is lost and someone loses money. For this reason, the threads on Fretz-Moon Pipe are cut deep, sharp, clean and true—they fit faster and save money.

Use Fretz-Moon Pipe for your next steel pipe job, and note the difference.

FRETZ-MOON TUBE COMPANY, INC. • BUTLER, PENNA.

FRETZ-MOON
PIPE
BLACK AND GALVANIZED

More important than the gasket is the filling of SMOOTH-ON No. 3.

SMOOTH-ON No. 3 fills every void in gasket and flange face with a metallic deposit which cannot shrink, shrivel, crack, dry or blow out.

At a cost of perhaps a cent or two more per joint, this protection usually averages paying a dollar or two in lessened line maintenance expense.

Write for the Smooth-On Handbook and get Smooth-On No. 3, in 1 or 5-lb. can or 25 or 100 lb. keg from your supply house or from us.

SMOOTH-ON MFG. CO., Dept. 12
570 Communipaw Ave., Jersey City, N. J.

Do it with SMOOTH-ON

NEW TRADE LITERATURE

Folder on Bath and Lavatory Faucets

Hays Mfg. Co., of Erie, Pa., is distributing an attractive folder, printed in two colors, lavender and black, illustrating and describing some of its bath and lavatory faucets, and its couplings for double bath faucets.

Folder on Oil Burner

The Beacon Burner Mfg. Corp. of Boston, Mass., has issued a four-page folder, 6 x 9 in., which tells the story of its oil burner in 57 words and 9 pictures. The folder states that this oil burner is "sold wherever nice husbands are nice to nice wives."

Folder on Automatic Oil Heating

Boston Machine Works Co. of Lynn, Mass., is sending the trade a folder describing and illustrating its automatic oil burning equipment, which is said to be simple in design, rugged in construction, quiet in operation and economical and efficient in performance.

Bulletin on Vacuum Heating Pumps

Ames Pump Co., Inc., of New York City, has issued a 12-page bulletin, 8½x11 in., featuring its line of vacuum heating pumps. Several units are illustrated and described in detail. Specifications and several tables of dimensions and ratings are included in the bulletin, which is designated as No. 700.

Folder on Tank Heaters

The Eastern Foundry Co. of Boyertown, Pa., is distributing a six-page folder, 3½x6 in., with illustrations and descriptions of its line of tank heaters with capacities from 40 to 90 gallons. These heaters consist of smooth uniform castings with gloss black finish, and they are furnished with either plain, copperized, galvanized or brass water jackets.

Bulletin on Cold Water Disc Meters

Worthington Pump & Machinery Corporation of Harrison, N. J., has issued an eight-page bulletin, 8 by 10½ in., containing illustrations and descriptions of its line of cold water disc meters, which are designed for general service with accuracy on low flows, conforming to the standards and test specifications adopted by the American Water Works Association and the New England Water Works Association.

Two Folders on Oil Burners

Old Colony Machine Works of Fall River, Mass., is distributing two folders illustrating and describing its line of automatic oil burners, which are designed for quiet, economical and dependable heat in residences, commercial buildings, apartment houses, churches, schools, clubs, etc. Several models are shown with a rated capacity of 200 to 8,000 sq. ft. of steam, and 320 to 12,800 sq. ft. of hot water.

Catalog of Pressure and Vacuum Gauges

The Federal Gauge Co. division of the Mercoid Corporation of Chicago has just issued its catalog G-6, illustrating and describing its line of pressure and vacuum gauges. The gauges are listed under the following headings: 1. Steel Case, Single Spring Gauges for High Pressure Vacuum and Low Pressure.—2. Compound Gauges.—3. Altitude Gauges, Hot Water Gauges, Tank-in-Basement Types for Hot Water Heating Systems.—4. Retard Gauges for Vapor and Vacuum Heating Systems.—5. Flanged Case, High Pressure, Low Pressure and Vacuum Gauges.—6. Compound, Combination and Altitude Gauges.—7. Ammonia and Hydraulic Gauges.—8. Double Spring Pressure Gauges for Conditions Involving Excessive Vibration or Pulsation of Pressure.—9. Test Gauges for Steam,

Gas, Air, Oil and Water.—10. Gas Proving Test Gauges and Gauge Accessories. The catalog consists of 12 pages, 8½ x 11 in., and it is bound in an attractive cover in four colors, gold, red, black and blue.

Circulars About Air and Vacuum Valves

W. A. Russell & Co. of New York City have just published two circulars about their line of automatic air and vacuum valves. Incidentally one of these circulars tells how a one-pipe steam heating system can be converted into a vacuum system, and how, when and where these valves should be installed. The other circular explains how cold radiators can be made hot, and how radiator noises can be stopped.

Circular Concerning Heating and Air Conditioning Systems

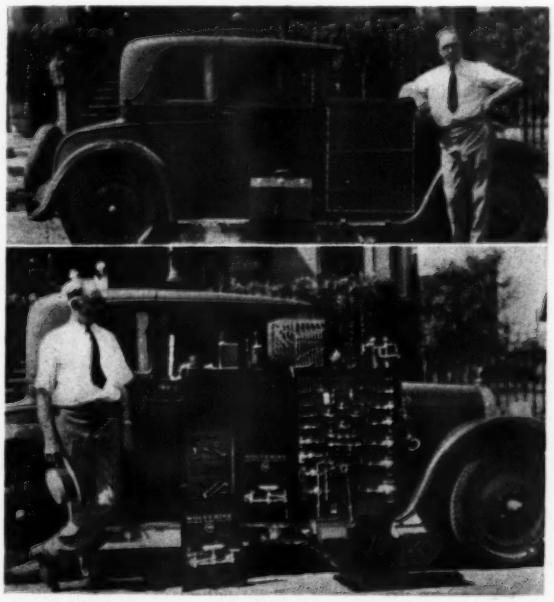
The Edwards Manufacturing Co. of Cincinnati, Ohio, is distributing a four-page circular, 8½ by 11 in., illustrating and describing its heating and air conditioning systems which have been designed to "clean, purify, heat or cool, circulate and vitalize the air we breathe." The units burn either gas or oil. The circular is printed in several colors and shows the construction and operation of these units.

Bulletin on New System of Hot Water Heating

The Stevens-Root Co. of Chicago has issued a bulletin illustrating and describing its new system of hot water heating including its circulating pump designed for use in connection with this system, making a combination that is "devised to circulate water where radiators are below the boiler, and when one building is to be heated by a boiler in another building, and to circulate water to all rooms almost at once."

A Handy Catalog of Vises and Pipe Tools

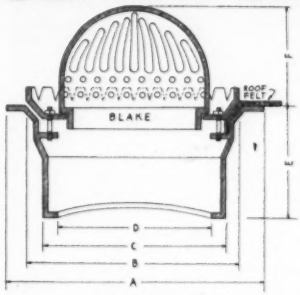
Hollands Mfg. Co. of Erie, Pa., has issued a twelve page catalog of its vises and pipe tools, including solid jaw vises, swivel jaw vises, bench vises, anvil vises, combination vises, malleable hinged pipe vises, clamp vises, roller jaw pipe vises, three wheel pipe cutters, roller pipe cutters, malleable reversible ratchet stocks, malleable pipe



C. H. Heagle of Chicago is shown here with a trunk and traveling display attached to his automobile which he has worked out to assist him in making calls on contractors

BLAKE Short Pattern Roof Drain

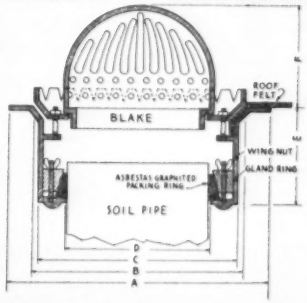
with Sand Arrester



K-106B. Considering the low price of this drain, you will be surprised at its good design, construction and efficiency. The angle clamping ring with brass bolts and nuts make a tight joint. Dome strainer is shallow—no sump. Made from 2 to 8 in. for screw or soil pipe.

BLAKE Short Pattern Roof Drain

with Expansion Joint cast integral. For Soil Pipe only. No screw connection.



K-106BE. This pattern is same as K-106B above, with a little length added for the expansion joint arrangement. Blake Combination Roof Drain and Expansion Joint represents quite a saving. Made from 2 to 8 in.

BLAKE SPECIALTY COMPANY
ROCK ISLAND « ILLINOIS

WOLVERINE BRASS

Dependable

COMPARE! Compare Wolverine Brass Goods of *today* with the same goods of 1929! You'll find them even better. You'll find many improvements. You'll find even greater values. And you'll find, as always, the same high quality of materials—painstaking care and accuracy in machining—fine finish.

As ever, Wolverine Brass Goods remain completely dependable. As ever, Wolverine keeps faith with the plumbing trade.

WOLVERINE BRASS WORKS
GRAND RAPIDS, MICHIGAN
We Sell the Retail Plumbing Trade

WOLVERINE

stocks and dies, adjustable stocks and dies, melting pots, malleable iron ladles and babbitt ladles.

Bulletin and Circular From Detroit Lubricator Co.

Detroit Lubricator Co. of Detroit, Mich., has just issued a bulletin, No. 54, illustrating and describing its line of control switches for pressure, vacuum, and temperature. These switches are all enclosed in black bakelite cases with removable covers. Both the operating range and differential are adjustable. This company has also published an attractive circular, bearing the title "Enjoy Even Warmth and Save Coal," featuring its line of temperature regulators, which can be used in connection with steam, hot water or warm air heating systems.

Circulars About Leaks in Steam and Hot Water Heating Systems

Radiator Specialty Co. of Charlotte, N. C., has just issued a timely circular about how to repair leaks in steam and hot water heating systems. Incidentally the circular predicts a cold winter with much repair work on heating plants, and suggests that wide-awake heating contractors should be prepared for emergency jobs. Another circular describes its metallic powder which has been prepared for repairing cracked boilers, leaky pipes and split nipples. A third circular directs attention to this company's cleanser for boilers and heating systems.

Bulletin About Centrifugal Pumping Units

Pennsylvania Pump & Compressor Co. of Easton, Pa., has issued a twelve-page bulletin, 8½ by 11 in., containing illustrations and descriptions of its line of single stage centrifugal pumping units. Among the constructional features of these units, emphasized in this bulletin, are: 1. The casing, containing suction and discharge of connecting yoke, is a single piece casting.—2. The motor end of yoke forms end shield for motor. Its solid construction prevents spray or liquid handled from entering motor.—3. Arrangement of suction and discharge openings affords facility of access to interior of pump by simply removing the end head. This arrangement will permit disassembling without disturbing suction or discharge piping.—4. The bronze impeller, in one piece, of enclosed type, is dynamically and hydraulically balanced and mounted on motor shaft extension. Several valuable tables and charts are also included in this bulletin.

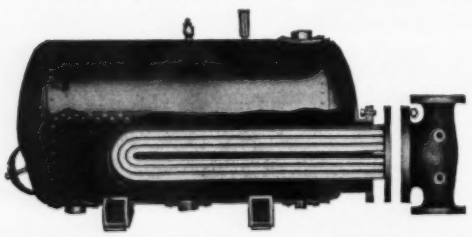
Bulletin on Motor Pumps

Ingersoll-Rand Co. of New York City has just published a 16-page bulletin, 8½x11 in., illustrating and describing its line of motor pumps with capacities of ¼ to 25 horsepower, or 5 to 800 gallons per minute. A few of the many liquids which are now being pumped with these pumps are: Hot and cold water, gasoline, fuel oil, brine and ammonia. They are also built into many machines as an integral part of the units. Such equipment includes air conditioning units, refrigerating units, water softeners, filters, oil handling and distribution machinery, etc. Tables of dimensions and pipe friction are also included in this bulletin.

Folder on Humidity Control

Lewis Air Conditioners, Inc., of Minneapolis, Minn., have just published a four-page folder, 8½x11 in., illustrating and describing a new device to control the operation of any equipment which may either add or withdraw moisture from the air. Its application is comparable to a thermostat which is set to maintain temperature at any desired degree by controlling the operation of any

NATIONAL
Red Head
STORAGE HEATERS
For Industrial Plants, Laundries, Apartments, Schools, Clubs, Hotels, etc.

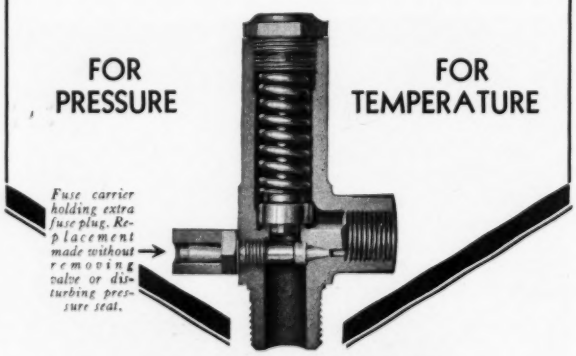


A well built heater, economical in operation, equipped with U-Bend heating element of Anaconda Copper, Steel Tank. Improved flanged T cover gives unrestricted flow area for entering steam. Tested to 100 lb. working pressure, 150 lb. hydrostatic pressure. Just consult the chart in Bulletin 68, sent on request. We do the engineering. Immediate delivery.

Makers of Heat Exchangers, Coolers, Oil Separators, Coils and Bends

THE NATIONAL PIPE BENDING CO.
Est. 1883
174-B River St., New Haven, Conn.
BOSTON NEW YORK PHILADELPHIA

MOORE RELIEF VALVES
MEAN MORE SAFETY


FOR PRESSURE
FOR TEMPERATURE
Fuse carrier holding extra fuse plug. Replacement made without removing valve or disturbing pressure seal.

PROTECTION
AGAINST BOILER EXPLOSIONS

The Moore Pressure and Temperature Valve protects the boiler from strains due to rising pressure. The temperature portion prevents explosion from overheated water.

Moore Valves give real protection at reasonable cost. Send for details and price sheet.

J. W. MOORE VALVE CORPORATION
EVERETT MASS.

equipment that adds heat. Likewise, this new device is set to maintain the humidity at any desired per cent by controlling the operation of equipment that adds moisture. Five diagrams are given showing how this device can be wired under various conditions.

Circulars on Refrigerator and Oil Burner Motors

The Brown-Brockmeyer Co., Inc., of Dayton, Ohio, has issued two 4-page circulars, 8½x11 in. in size, featuring its line of motors. Special attention is directed to its motors of the refrigerator and oil burner type. The frames of these motors rest on two large rubber pads, which run the full length of the frame, and the motors are suspended from four rubber grommets, a type of mounting which absorbs vibration and insures quietness.

Silver Anniversary Circular from Dick Brothers, Inc.

Dick Brothers, Inc., of Reading, Pa., have just issued a silver anniversary circular in commemoration of the establishment of this concern in 1907, featuring some of their most popular products such as an iron pipe extension flange single faucet; a quick compression, double sink faucet with metal soap dish and metal lever handles, and swinging spout with strainer; a compression lavatory faucet, and a double laundry tray faucet with swinging spout. This concern has also recently issued another circular illustrating and describing in detail some of its combination bath and shower fixtures and its lavatory fixtures with heavy all metal index handles.

New Booklet About Radiator Enclosures

The American Radiator Company of New York City has published a new booklet about radiators and radiator enclosures under the title of "The Radiator Goes Modern." This booklet consists of 24 pages, 8½x5½ in., and is copiously illustrated with high grade halftone engravings showing the artistic manner in which this company's new radiators may be recessed into the wall and made to look like an integral part of it by use of radiator enclosures. In this way the radiators may be completely concealed or framed only, leaving the front radiator surface open for its beneficent radiant heating effect.

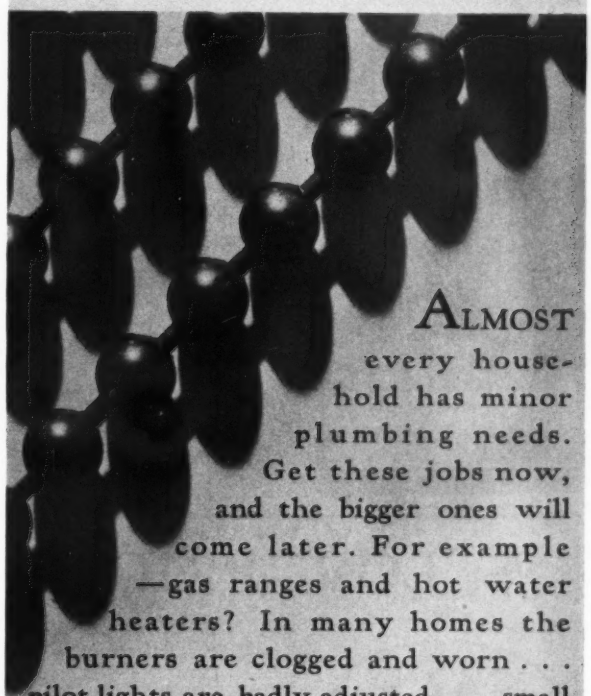
Bulletin on Steel Heating Boilers

Fitzgibbons Boiler Company, Inc., of New York City and Oswego, N. Y., is distributing an eight-page bulletin, 8½x11 in., announcing a new series of steel heating boilers for any fuel and any heating need in residences and smaller types of public buildings. In announcing these boilers special attention is called to the point that they are equipped with a mechanism which balances the draft. This mechanism is built into the boiler and works all the time while the boiler is in operation, compensating for the constant variation in flue gas pressures, maintaining the draft at its most economical level within a few thousandths of an inch, in spite of the rise and fall of internal pressures, and holding flue gas temperatures to the minimum.

Bulletin on Miniature Steam Generators

Commonwealth Electric and Manufacturing Co. of Boston, Mass., has just published its bulletin, No. 52, illustrating and describing its line of electric-heated miniature steam generators, which have been designed for producing small quantities of steam at high or low pressure, as required in many manufacturing and trade processes, laboratories, etc., for heating, drying, humidifying, shrinking, bending, cooking and boiling, washing and cleaning, steaming, moistening, sterilizing and pasteurizing, etc. The steam is ordinarily circulated through pipe coils in various appliances such as jacketed kettles and tanks, hollow cylinders, plates and tables (closed systems); or it is blown directly as live steam onto materials or into chambers (open system).

Keep After The Little Things!



ALMOST every household has minor plumbing needs. Get these jobs now, and the bigger ones will come later. For example—gas ranges and hot water heaters? In many homes the burners are clogged and worn . . . pilot lights are badly adjusted . . . small leaks are neglected. Use the telephone . . . your window . . . mailing pieces.

And when doing a job, there's a chance for extra profit with Bead Chain replacements on plumbing fixtures. We will send you circulars on Bead Chain for household plumbing, and copy for a letter on the importance of putting gas ranges and hot water heaters in condition. Tell us how many circulars you can use.

USE BEAD CHAIN FOR PLUMBING

Trade Mark Reg. U. S. Pat. Off.

THE BEAD CHAIN MANUFACTURING CO.
Bridgeport Connecticut

REDLON
WATER CLOSET FITTINGS

One sure way to simplify water closet installations is to use Redlon fittings. They enable you to have the advantages of a lead connection without the trouble. The lead above the hub is six inches in length and can be had longer if desired and it is PART OF THE FITTING.

Made for both standard and extra heavy soil pipe.

O. M. REDLON
Cor. Front *and* Ferry Sts.
BATH MAINE

New LOW PRICES
on

"IT VAPORIZES" WJ T.M. REG. U.S. PAT. OFF.

Boiler *and* Heating System Cleanser

EFFECTIVE NOW!

The makers of
BOILER SOLDER SEAL
announce a drastic reduction in NET TRADE PRICES on W J.

Write today to

Radiator Specialty Company
Charlotte, N. C.

Send me price information and complete data on W J BOILER and Heating System CLEANSER which cleans boiler, radiators and pipes in ONE operation.

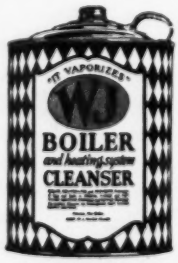
Firm.....

By.....

Street.....

City.....

Important — Please attach coupon to your letterhead.



"IT VAPORIZES"

NEW CONTRACTORS & INCORPORATIONS

Spencer, Iowa.—Theodore Lundt has opened a plumbing and heating business here.

Fredericksburg, Iowa—William Mueller has opened a plumbing and heating business here.

Wyndmere, N. Dak.—Arnold Lein has opened a plumbing and heating business in this town.

San Francisco, Calif.—William J. Ford has opened a plumbing and heating business at 856 Cole street.

Portland, Ore.—E. W. Morland has opened a plumbing and heating establishment at Foster and Gates roads.

Syracuse, N. Y.—Raymond C. Gannon has established a plumbing engineering and contracting business at 355 West Ostrander Avenue.

Detroit, Mich.—The Deppman & Furney Plumbing & Heating Co., 5768 Hamilton avenue, has been incorporated with a capital stock of $75,000.

Los Angeles, Calif.—The Plumbing Repair Co. has started in business at 1404 Angelus avenue. The owners are Ray M. Anderson and Wm. A. Godschalk.

Coleraine, Minn.—The Coleraine Plumbing & Heating Co. is the name of a concern which has just started in business under the management of Helmar Martinson.

Brooklyn, N. Y.—With a capital of $5,000, the Astor Plumbing and Heating Corporation has been chartered, to establish and operate a plumbing and heating engineering and contracting business. Jacobs & Nadell, 307 Washington street, represent the new firm.

Chevy Chase, Md.—The firm of F. M. Amberger, Inc., has been chartered, with a capital of 100 shares no par common stock, to engage in the plumbing engineering and contracting business. The Capital Trust Company, Dover, Del., represents the new concern.

Buffalo, N. Y.—The Wilson Plumbing System has been organized here as a partnership, to establish and operate a plumbing engineering and contracting business. The principals of the new concern are William M. Simmons, 1536 Hertel avenue, and Wm. A. Keller, 91 Beverly road.

Brooklyn, N. Y.—The Shore Road Engineering Company has been organized and incorporated, with a capital of 50 shares of no par common stock, to establish and operate a plumbing engineering and contracting business. L. L. LaVine, 215 Montague street, represents the new concern.

Flushing, N. Y.—With a capital of $10,000, the Seiferth and Seiferth Plumbing and Heating Company has been organized and incorporated to establish and operate a plumbing and heating engineering and contracting business. The local law firm of Starks and Cook, represents the new concern.

New York, N. Y.—The Zimmerman Brothers Plumbing and Heating Company has been organized and incorporated, with a capital of $10,000, to establish and operate a plumbing and heating engineering and contracting business in Queens. The new concern is represented by I. Schleider, 1440 Broadway.

Jersey City, N. J.—With a capital of 100 shares of no par common stock, the Trainor Plumbing and Heating Company has been organized and incorporated. It is planned to establish and operate a general plumbing and heating contracting and engineering business. N. Louis Paladeau, local attorney, represents the new concern.

WHAT WOMEN ARE DOING

BY DOROTHY EDWARDS

New Jersey State Board of Auxiliaries Holds Successful Meeting

The first meeting of the season of the New Jersey State Board was held on October 26 at the Elks Club, Jersey City, N. J. State President Mrs. Henry Bunker, Jr., Union City, took charge. She was presented with lovely bouquets of flowers from the North Hudson auxiliary and the Jersey City auxiliary. Mrs. J. Preston Perham of Boston, national president, was warmly welcomed by the group on her arrival. She also was presented with flowers from the Jersey City auxiliary. Mrs. Perham gave an interesting talk about her trip to the west and brought greetings from many auxiliaries she had visited. Two national directors, Mrs. Wm. Metcalf of New York and Mrs. Charles Zimmerman of New Jersey, also attended this meeting.

After an interesting discussion of important topics, the visiting officers and members of the executive board were the guests of the Jersey City auxiliary at a dinner and theater party. At that time the ladies were joined by the master plumbers. The credit for this successful affair is due to both Mrs. J. J. Corcoran and Mrs. Robert MacDonald of Jersey City. The next meeting will be held at Orange, N. J., some time in December.

Chicago North and Northwest Auxiliary Donates Warm Clothing

The North and North West Women's Auxiliary of Chicago held its regular monthly meeting on October 26 at the Logan Square Athletic Association Club Rooms with 18 in attendance. Business consisted of the donation of warm clothing presented to the Women's Sewing Guild and the elimination of members who are two years in arrears of their dues. Cards in the form of bridge and five hundred were enjoyed. Delicious home made bread was used in making ham and cheese sandwiches, which were prepared by Mrs. F. E. Pearson, assisted by Mrs. George Matthews. Home made cake was also served.

Recently 26 members of the auxiliary attended a performance at the Grand Opera House and witnessed the delightful show "Of Thee I Sing." Mrs. H. H. Diedesch was chairman of the committee in charge and was assisted by Mrs. Robert Liss.

Chicago South Side Auxiliary Holds Card Parties

Twenty-one members were present at the October meeting of the South Side Auxiliary of Chicago, held at the Broadview Hotel. Mesdames Cepican, Hudon, Meyers and Strauss were hostesses. A report by Mrs. Delehant, chairman of the sick committee, indicated that the members who had been injured in the recent accident were getting along very nicely. A letter from the national president, Mrs. J. Preston Perham, was read, expressing regret over her inability to visit the South Side Auxiliary on her return from the coast.

A profit of $5.50 was realized from the card party at Mrs. Hager's home in September. Mrs. Delehant and Mrs. Khym offered their homes for similar card parties. The dinner party which had been planned for October was postponed until some future date. Mrs. Hager gave a report of the national convention, which proved very interesting. It was decided that all the future meetings of the auxiliary are to be held at the Broadview.

After the regular business routine, card games of bridge and five hundred were enjoyed.

San Francisco Auxiliary Celebrates Thirty-Fifth Anniversary

Members of the San Francisco, Calif., Women's Auxiliary met on November 24 with Mrs. William Goss playing the role of hostess. During the business session, plans for a Christmas party were discussed. It was also decided to hold the annual election of officers at that time. Cards were enjoyed following the meeting, and later a baked ham luncheon was served. Lovely yellow marigolds comprised the table decorations.

The auxiliary celebrated its 35th anniversary in October with a luncheon and theater party. There were 35 in attendance. The center piece of the table was quite unusual. It was made in the form of a plaque of white asters and "35th Birthday" written on it. Candles were on either side. Mrs. Sand presented Mrs. Charles Mayer, the only charter member present, with a lovely corsage. Mrs. Balling, Mrs. Sand and Mrs. Coleman were responsible for the arrangements for both the lovely luncheon and theater party.

Top row, from left to right: Mrs. J. Hawley of Sacramento, Mrs. B. T. Schulierts of Berkeley, and Mrs. J. V. Young of San Francisco.—Bottom row, left to right: Ed. Hokom of Palo Alto, J. Bracesco of Menlo Park, and P. E. Brand of Redwood City, at a recent meeting of the Northern California Federation of Plumbing and Heating Industries

LIQUID SOAP FIXTURE

Latest design push-in type. Pressing of button delivers measured quantity of soap. At no position of button can soap run in steady stream. Nickel-Plated or Chromium finish. Send for catalog.

Imperial Brass Mfg. Co.
1231 West Harrison Street
Chicago, Illinois

4"x5" Oval Float

NO-SOL COPPER FLOATS

No-Sol Floats incorporate all features necessary to the satisfactory performance of a tank float.

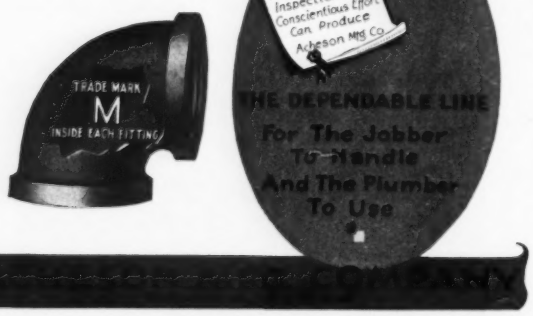
Each float is individually tested and guaranteed.

INCORPORATED 1907

The AYLING & REICHERT CO.
3047 N. Erie St. Toledo, Ohio

5" Round Float

ACHESON BRASS FITTINGS


The Best Brass Fittings that Experience, Modern Machinery, Rigid Inspections and Conscientious Effort Can Produce
Acheson Mfg Co.
TRADE MARK
M
INSIDE EACH FITTING
THE DEPENDABLE LINE
For The Jobber To Handle
And The Plumber To Use

• WARNOCK •

Triple Wear Wrenches

The Warnock wrench is easyto adjust. The strap is arranged in such a way that it can be drawn absolutely tight in *one* movement. Notice, too, that this strap is triple folded at the point of greatest strain.

For chrome, brass and nickle plated pipe

WARNOCK MFG. CO., Worcester, Mass.

Pasadena Auxiliary to Hold Christmas Party

Ten members of the Pasadena, Calif., Women's Auxiliary met on November 4 at 409 South Wilson avenue in that city. Plans were made for holiday dinners. A tamale dinner and a large birthday cake decorated with candles were immensely enjoyed. The table was decorated with a thanksgiving fruit center. Mrs. W. H. Swihart acted as hostess. The December meeting will be a Christmas party.

Denver Auxiliary Elects Officers

The Ladies' Auxiliary to the Denver Master Plumbers' Association met at the home of Mrs. V. A. Kandorf on October 26. A very delicious luncheon was served at one o'clock. Fifteen were present at this meeting, it being the annual election of officers. The results were as follows: Mrs. C. R. Cooper, president; Mrs. F. X. Kreidl, vice president; Mrs. J. P. Brickey, treasurer; Mrs. H. H. Mellema, secretary, and Mrs. F. X. Bordeau, corresponding secretary. Whist was played, with Mrs. Julia Hensler and Mrs. John Hensler carrying off the prizes. The hostess prize was won by Mrs. C. R. Cooper. The next meeting will be held at the home of Mrs. J. J. Laverty.

Ogden Auxiliary Gets Together in Kitchen

Mrs. Charles A. Stone entertained the Ogden, Utah, Auxiliary to the Ogden Plumbing and Heating Engineers on October 27. The business proceedings were omitted at this meeting because of the Hallowe'en party which was held that night. Bunco was played and everyone listened to the hunting stories told by the men. A midnight supper was served and lovely bunco prizes were then awarded. Mrs. Stone has the following suggestion to make: "We have half our fun while we are washing up the party dishes out in the kitchen. Try it at your parties and see if you don't become better acquainted." In view of the success of all of the Ogden parties, this should be a good recommendation.

Mrs. Leigh entertained the auxiliary on October 13. Bunco was played and delightful refreshments were served.

Minneapolis Auxiliary Gives "Family Album" Party

The Minneapolis, Minn., auxiliary held its October meeting at the home of Mrs. Harvey Strader with Mesdames Martin, Keefe, Oberfeldt and Mooney assisting. The hostesses served a delicious luncheon at 12:30 which was followed by the regular business meeting. It was voted to send a check to the Minneapolis Community Fund for relief work, also to buy a health bond from the Anti-Tuberculosis campaign. Bridge and five hundred followed.

The group headed by Mrs. M. Jensen was entertained at the Jensen home on the evening of October 24. Bridge was played at seven tables. A lovely lunch was served and prizes distributed. It was decided to have such a party once a month.

Mrs. Bartell's group gave a party at the Zinsmaster Bakery on Tuesday, November 1. Bridge and five hundred followed the luncheon. Door and table prizes were distributed. The attendance showed that this group worked hard in order to add to their group treasury.

About 100 association members and their wives attended the party given under the direction of Mrs. J. Beaudry and her group of workers. A baked bean dinner was served at 6:30 in a most delightful club room. At this time a community "family album" was brought out. Each one

present brought a few old and new photographs and the entire group was scrutinized by those present which resulted in loads of laughter and fun. Tables were then arranged for bridge, five hundred and bunco. Prizes for the highest scores were distributed. Much credit is due the committee.

Alameda County Auxiliary Meets at Walnut Creek

The members of the Alameda County, Calif., auxiliary pride themselves on their regular attendance as well as active participation in organization affairs, despite the fact that some of them live from ten to twenty miles distant from headquarters in Oakland. This was borne out at the October 17th meeting, which was held at the home of Mrs. W. F. Mauzy in Walnut Creek, where five 6-place tables were set with attractive Hallowe'en decorations. Following a most delicious luncheon, the ladies played whist on the broad veranda which commands a majestic view of Mount Diablo. High score honors went to Mrs. R. W. Timmons of Richmond, Mrs. W. Herbert Graham and Mrs. Dwight W. Durant of Oakland, and to Mrs. Mauzy. Plans are already well under way for the regular Christmas party, according to the president, Mrs. W. D. J. Evans of Oakland.

Pasadena Auxiliary Discusses Year's Work

Mrs. W. H. Swihart, president of the Pasadena, Calif., Women's Auxiliary arranged a lovely meeting at her home on October 21. The ten in attendance discussed the year's work and the outcome was a splendid success. Games and guessing contests added to the enjoyment of the afternoon. Later, a chicken dinner was served. The decorations were carried out in Halloween novelties.

Denver Auxiliary Plans Christmas Dinner

The Denver, Colorado, Women's Auxiliary held its November 9 meeting at the Blue Parrot Inn with Mrs. Laverty as hostess. A very delicious luncheon was served at 1 p. m. The business meeting was called to order by the new president, Mrs. C. R. Cooper. Plans were made for the annual Christmas dinner. Whist was played with honors going to Mesdames Kiser, Cooper and Hensler. Mrs. H. H. Mellema will entertain the group at the next meeting.

Connecticut Auxiliary Honors Memory of George Washington

An enthusiastic meeting was held recently by the Women's Auxiliary to the Master Plumbers Association of Connecticut at the Hotel Green in Danbury. The educational period of the meeting was devoted to the commemoration of George Washington, because of the bicentennial of his birth. Mrs. Brown of Middletown prepared an interesting paper on the life of Washington which everyone enjoyed. Following the adjournment of the meeting, a social hour took place.

Mansfield Auxiliary Remembers Red Cross

The Mansfield, Ohio, Women's Auxiliary was entertained by Mrs. Herman Hoffman at her lovely home on Wednesday afternoon, November 16. There was one guest present, Mrs. Oscar Erdenberger. During the business meeting it was decided to make 24 boys' blouses for the Red Cross. It was also decided that each member donate something for baskets to be given to needy families. Mrs. Malone invited the group to her home for the regular Christmas

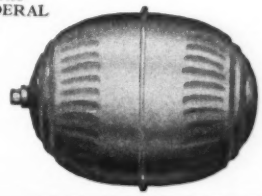
THE *Reichert Line* FILLS *Every* TANK BALL *Requirement* ★

The Reichert Line: Leader Tank Balls ... Leader Floats ... Federal Floats ... Toledo Solderless Floats

TANK BALLS that stand up in service and yield you a healthy profit. That's the Reichert Leader, and there is nothing else you can ask of a tank ball. The same holds good for the Federal Float. Where the service will be severe, that's the spot for you to use the Federal.

The LEADER

The FEDERAL



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The REICHERT FLOAT & MFG. COMPANY
2238 SMEAD AVENUE
TOLEDO - OHIO

PERFEX

These 7 betterments cost you no more

1 Copper and bronze core from inlet to outlet. No corrosion; no unequal expansion; no leaking.
2 Core is suspended within unit, giving complete freedom for expansion and contraction.
3 Core can be quickly removed without disturbing cabinet, motor, wiring or even the setting of the louvres.
4 Entire unit is suspended from ceiling, eliminating load and strains on piping.
5 Three point motor support.
6 Liberally rated motor and quality construction throughout.
7 Individually tested and guaranteed.

Greater experience and greater facilities make this plus value possible. Write for engineering and installation data.

PERFEX CORPORATION
Milwaukee *(Heating Division)* Wisconsin
Heat Radiation Specialists for Over Twenty Years

Also Manufacturers of: Concealed convection heaters of advanced design and construction. Process cores for all types of pre-heating and process work.

UNIHEAT

THE "MODERN" RANGE BOILER

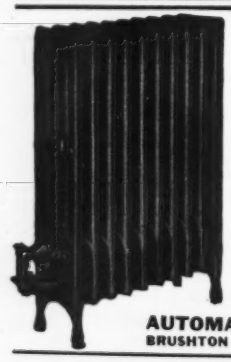
30 and 40 Gallons
200, 250 and 300 lb. Test

In the above capacities the top and body of the "Modern" Boiler is formed from a single extra-heavy Copper Shell and drawn cold-seamless to the bottom, thus eliminating the top joint and the side seam and leaving only a bottom joint. The bottom head is hydraulically pressed on the shell and riveted securely with Copper Rivets closely spaced. Over the rivets a seamless copper band is spun and sweated, reinforcing the joint and making a solid construction which is impossible to come apart under any circumstance. Every boiler is reinforced internally and guaranteed against collapse. The interior is thoroughly tinned.

Sold Through Wholesalers Only

HAYES MFG. CO., Paterson, N. J.

AUTOMATIC GAS-STEAM RADIATORS



Modern heating equipment, meeting present day demands, approved by the American Gas Association Testing Laboratories. Can be used as part of the regular plant in heating season, or as a separate heating unit in unseasonal weather. Its biggest selling features are economy of operation and ease of installation. Write for information.

AUTOMATIC GAS-STEAM RADIATOR CO.
BRUSHTON AND THOMAS STS. PITTSBURGH

MUELLER CO.

1857 Three-Quarters of a Century of Service to Health and Sanitation. 1932

Decatur, Illinois

Make PROFITS on Remodeling
THE KAINER
PRESSURE GOVERNOR
Accurate
Simple
Safe
Automatic Control for Hot Water Heating Systems

Write today for prices and Bulletin 32-B
A. S. M. E. Approved

KAINER & COMPANY CHICAGO
761-771 MATHER STREET

party which will be held December 22, at which time gifts will be exchanged. At the close of the meeting, Mrs. Hoffman served delicious refreshments.

Mrs. Alex Grassick entertained the group for the October meeting. A former member of the auxiliary, Mrs. Lillian Lersch, was a guest. Dainty refreshments were served.

On October 23, the auxiliary entertained the husbands and children at a two course chicken dinner in the Pavillion at North Lake Park. Mrs. Homer Frye and Mrs. W. E. Antrican were in charge and served a delicious dinner. The evening was spent socially.

Philadelphia Auxiliary Entertained by Mrs. Geo. F. Uber

The Philadelphia, Pa., Women's Auxiliary met on October 25 at the home of Mrs. George F. Uber. Radio and cards entertained the group of 24 present. The ladies are working hard to secure funds for work to be carried out this winter.

Germantown Auxiliary's Monthly Meetings

The Germantown, Pa., Women's Auxiliary met on November 1 for its regular monthly meeting. There were nine members in attendance. Pies and coffee were served by the hostesses, Mrs. James J. Rooney and Mrs. I. Lee. On December 6, the December meeting was held at the Waterview Recreation Centre.

Tampa Auxiliary Gave Successful Fish Fry

The Tampa, Fla., Women's Auxiliary held a fish fry recently for its members and their husbands. It was a great success, and the ladies served fish, cabbage salad, potatoes, rolls and coffee. A substitution of baked beans for the fish was made for one of the men. For dessert guava paste and cream cheese were served.

Buffalo Auxiliary Elects Officers

The annual meeting of the Women's Auxiliary of the Buffalo, N. Y., Master Plumbers' Association was held on November 1 in the Root Building in that city. Previous to the meeting a luncheon at Gandy's took place. After the regular order of business, Mr. W. Robertson, chairman of the Taxpayers' League, addressed the group. An election of officers took place, resulting as follows: Mrs. Julius Irr, president; Mrs. Arthur Huck, vice president; Mrs. Henry Ritter, treasurer, and Mrs. William Ludlow secretary.

Schenectady Auxiliary at Work on Quilt

The Schenectady, N. Y., Women's Auxiliary met on November 9 at the home of Mrs. Frank V. DeForest. There were nine present. During the meeting a design for a patchwork quilt was chosen. Mrs. DeForest received flowers from the auxiliary during her recent illness and at this meeting a card of thanks was read. Punch and cakes were served by Mrs. DeForest. The next meeting will be held in December.

Rochester Auxiliary Entertained by Mrs. H. Heinzle and Mrs. A. Heinzle

The Women's Auxiliary to the Associated Master Plumbers of Rochester, N. Y., held its monthly meeting on November 9th at the home of Mrs. H. Heinzle at 2:30 p. m. Cards were played following the meeting.

Mrs. A. Heinzle entertained the Rochester group at her

home on November 16 with a card party. Prizes were awarded and refreshments served.

The auxiliary expects to give a luncheon sometime in December.

Albany Auxiliary Opens Season

The first meeting of the season was held by the Albany, N. Y., Women's Auxiliary on October 27. Mrs. William Dugan, vice president, presided over this meeting in the absence of Mrs. Andrew Ryan, president. A report of the proceedings of the national convention was made by the delegates attending. It was also decided to arrange for an essay contest among the school children and a committee was appointed. This meeting was held at the home of Mrs. Henry J. Noord.

During the summer, the auxiliary celebrated its 3rd anniversary at the summer home of Mrs. J. O. Stapf, to which the men and children were invited, and all had a very good time.

Denver Auxiliary Entertained by Mrs. V. A. Kiser

The women's auxiliary of the Denver Master Plumbers' Association met recently at the home of its president, Mrs. V. A. Kiser. A lovely luncheon was served after which whist was played. The next meeting will be held at the mountain cabin of Mr. and Mrs. John Hensler.

Detroit Auxiliary Helps Needle Work Guild

The members of Detroit auxiliary have been meeting on the first and third Tuesdays of each month at 3946 Trumbull avenue, which is the club house ordinarily used by the master plumbers. There is an average attendance of 15 ladies. After the general business routine, cards and a luncheon are enjoyed. These luncheons and card parties are under the direction of Mrs. Brabyn, who, with her committee's assistance, has given great satisfaction. The work for the Needlework Guild has been very successful this year, and Mrs. Marquardt, who is president of the section, was well pleased with it. She and Mrs. Nellie Hughes attended the annual meeting of the guild, which was a most inspiring one. A report of it was given to the auxiliary on Tuesday, November 15, and it was agreed at that time to keep the quota for their section.

On October 28 the members of the auxiliary together with their husbands enjoyed a get-together party, which was well attended, and everyone enjoyed the dancing, singing and refreshments.

Group of ladies attending the recent annual convention of Florida Plumbing and Heating Dealers

Be sure the washers you install are marked

"ACME"

RAPPING and chattering of faucets does not make for satisfaction in any household, and if you eliminate this condition, you will not only make a sale, but you will build future business. And that's what ACME Bibb Washers do—eliminate this source of complaint. They come in seven sizes, 100 to each can, or you can get the Handipak which holds 100 of assorted sizes. Ask for full information.

LAVELLE RUBBER COMPANY
320 WEST ILLINOIS STREET . CHICAGO, ILL.

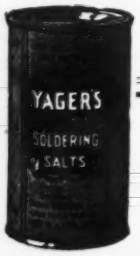
THE NAME "ACME" IS STAMPED ON EVERY WASHER

Have You Any Used Tools?

No doubt you have. Chances are they are laying somewhere around your shop. Possibly new tools have replaced the old. These old tools will bring you *dollars* if advertised in the For Sale columns of DOMESTIC ENGINEERING. Some plumber in some other locality may be waiting to obtain these tools, in good condition, at reduced prices. The very low rate of 8 cents per word makes the Classified Page a good buy.

Domestic Engineering
1900 Prairie Ave. CHICAGO

SEE FOR YOURSELF
what
YAGER'S
will do!



IT'S easy to do high class lead work with the aid of YAGER'S Soldering Salts, and it's inexpensive to use.

Write for a sample can. We will be glad to send one to you without charge, because once a user of YAGER'S, always a user.

ALEX R. BENSON CO., Inc.
Hudson, N. Y.
For list of distributors see 1932 McRae Blue Book
SALES AGENTS IN CANADA:
Canadian General Electric Co., Montreal and Toronto

See Page 638 Domestic Engineering Plumbing and Heating Catalog.

TABER SUMP PUMPS IN GENERAL USE

Built for 5 ft. pit. Single and Duplex Units

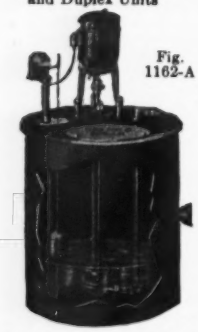


Fig. 1162-A

The larger Taber Sump and Sewage Pumps are being specified and used on jobs requiring high grade equipment. Following are single unit sizes in general use. . . . 1750 R.P.M. 60 Cycle and Direct Current.

Type	G.P.M.	Head	Outlet,in.	Plate in.	H.P.	Wgt. lbs.
AL-25-2	25	20	1	24	½	272
AL-50-2	50	20	1½	32	¾	350
AL-75-2	75	20	1½	36	1	436
AL-100-2	100	20	2	36	1½	481
AL-150-3	150	20	2½	36	2	607
AL-200-3	200	30	3	36	3	675
AL-300-3	300	30	4	36	5	772

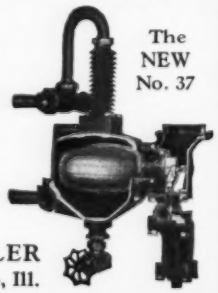
Write for complete Bulletin 88-629

TABER
TABER PUMP CO. Est 1859
Taber Pump Co., 290 Elm St., Buffalo, N.Y.

Sold with and without tank

Install a PROVED Feeder!

—the only feeder with the cool, scale-free feed valve that never sticks or binds—the only line that includes a feeder with the quick hook-up feature for small boilers—the most widely installed and thoroughly proved automatic water level controls on the market.



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McDONNELL & MILLER
400 N. Michigan Ave., Chicago, Ill.

New Monel Metal "Straitline"
CABINET SINKS

NOW AVAILABLE

Ask your jobber for details or write direct

Monel Metal is a registered trademark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

A HIGH NICKEL ALLOY
MONEL METAL
NICKEL ALLOYS LOOK BETTER LONGER

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

It's a Great Life If Your Endurance Is Good!

Another complete short story, from the interesting biography of the wife of one of the men in the trade who, as you will find, is doing much to promote her husband's business. This interesting story tells how this clever business woman helps in her husband's office

That I showed good judgment on this latter point was demonstrated shortly after in a beautiful building put up by a supply house not far from us. They have a broad frontage in which are six arched windows of small leaded glass panes, beautiful windows, each perhaps six by ten feet tall, but it is impossible to see through them without being close up, and the display of attractive equipment is lost to all save a few pedestrians. Perhaps it was designed with the psychological idea in mind that one is attracted by the mysterious and what he cannot see clearly he will come closer to investigate, but I am afraid if such was the purpose, it was lost, for enough is not visible even to attract.

For the interior of our showroom I insisted on gray rough plaster walls, light green woodwork with walnut trim, a terrazo floor, plenty of light by day and by night, and I think no one was disappointed with the result when, with the shiny new equipment in place and spotlights focused on it, it became the veritable bright spot of East Main St.

To create a homelike atmosphere in my own office, I kept the original old fireplace, my desk flanking it on one side, a bookcase on the other. The floor was covered with black and white tile linoleum, and all the furniture was painted black but with red leather cushions by way of introducing a note of cheerfulness.

But enough of office furnishings or one will conclude that was all we had to think about. On the contrary we were busy in more ways than one. It was in the spring of 1927 that we moved to our new location. By the fall of that year we had five salesmen regularly employed and some forty odd mechanics. Business had grown by leaps and bounds by reason of increased effort, improved location, and a building boom.

For the next two years we were sitting on top of the world, so to speak. I still worked very hard, routing the salesmen, checking their calls, and continuing all forms of advertising including our direct by mail solicitation. I was on the job every day, but money came easier, and it was not such a struggle as it had been. In the innermost corner of my mind I had long cherished the idea that when palmy days such as these came to us, I would close up my desk and retire to home and fireside, but I had become deeply interested in the business, the time never seemed just ripe to leave, and somehow or other I never got around to taking my departure.

Before I did, the tide began to swing the other way, and I was glad that I had stayed at my post. It was hard to become adjusted to the decline which we barely noticed in 1929, and as most every one else did, we made the mistake of going along pretty much in the same old way. As the slowing up gradually made itself felt more and more keenly, however, we began to devise ways and means to meet it. One of the first steps we took was to reduce the overhead which we recognize now as having been out of proportion to the volume of business that we were doing even at the peak period.

Are we discouraged, though? Indeed we are not, for we have a sincere faith in the plumbing and heating industry and in its possibilities which we consider even now as standing at least on a par with those of any other industry.

As the upward trend advances we expect to go alone with it, well aware that we have lost ground to reclaim, but that we have also gained a wide and valuable experience that we expect to make pay us dividends before we are through playing the game. To me the next few years present a wonderful opportunity to the wife of the plumbing and heating man who will work along with him in every way possible, helping directly in the business if she can or watching the corners more closely at home so that a leak that drains the business may not be traced to that point.

PIPE LINES CONNECTED BY L·Y·T

THE AMERICAN LANGUAGE IN ENGLAND

The Rev. Mr. Darby (to his wife): "Isn't it curious that a great city like Chicago should have such indifferent roads? It must rob motoring of a good deal of its charm. Here, for instance, is a headline, 'Taken for a Ride and Bumped Off.'"

—"Punch."

WHEN HE IS NOT THINKING OF STATISTICS

Wag: "Next to a beautiful girl, what do you think the most interesting thing in the world?"

Nag: "When I'm next to a beautiful girl, I'm not thinking of statistics."

A Woman out in California boasts proudly that she still has in her possession the first biscuit she made thirty-seven years ago. We dislike very much questioning the veracity of a lady, but we are certain she is quite wrong. We are sure we ate that very biscuit last summer at an oil station restaurant in Ohio.

—R. H. L. in "Chicago Tribune."

Mrs. O'Brien: "Was your old man in comfortable circumstances when he died?"

Mrs. Finnegan: "No, 'e was under a train."

A NEW PART

Traffic Police: "Hey, there, don't jam up traffic! Why don't you use your noodle?"

Sweet Young Thing: "I didn't know the car had one."

Kind Hearted Man (to small boy who couldn't reach door bell)—Let me ring it for you. What next, my little man?

Small Boy—Run like hell, that's what I'm going to do!

—"The Mueller Record."

Scotch Patient: "What are your charges, doctor?"

Doctor: "Five dollars a visit."

Patient: "Ah, but we don't want you to come on a visit; we only want you to stop ten or fifteen minutes.

Applicant: "Here is my diploma in public speaking."

Employer: "Very well, go out in the other room and address those envelopes."

PROBABLY SHE THOUGHT SO

"Mamma, am I descended from a monkey?"

"I don't know, son, I never knew any of your father's people."

—"Austin News."

VOCATIONAL EDUCATION

Mrs. Simpson was taking her son to school for the first time and, after impressing the schoolmaster with the necessity of his having a thorough education, finished up by saying, "And be sure he learns Latin."

"But, my dear madam," said the master, "Latin is a dead language."

"All right," said Mrs. Simpson, "he'll want it. He's going to be an undertaker."

—"The Kablegram."

Defendant: "But, Your Honor, I am a college boy."

Judge: "Ignorance doesn't excuse anybody."

SHE GAVE HIM A LESSON

Lady: "Do you keep electric refrigerators?"

Fresh Salesman: "No, we sell them."

Lady: "Well, you'll keep the one you were going to sell me!"

—"It's Said and Done."

Excavation work on a big sewer had reached a low and mucky place and the Italian laborers were having their troubles. Suddenly there rose a shout from Tony:

"Kum ear! Kweek! bringa da shov! bringa da peek! Pete's stuck'n da mud up t'is knees!"

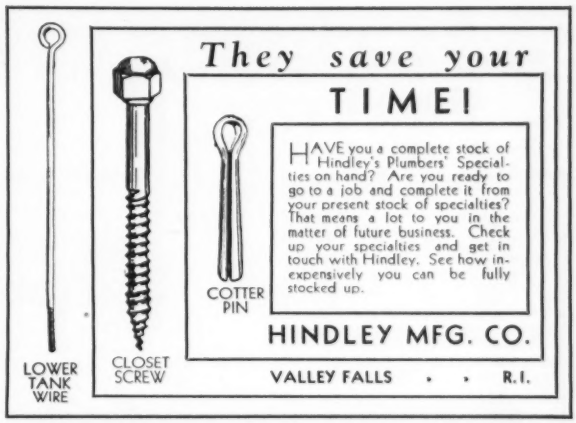
"B'gad, tell 'im to wade out," growled the foreman.

Tony: "He no canno wade! He's wrong end up!"

—"The Leighton Gloom Chaser."

The hardest thing about good New Year's resolutions is making them good.

L. Y. T.



They save your TIME!

HAVE you a complete stock of Hindley's Plumbers' Specialties on hand? Are you ready to go to a job and complete it from your present stock of specialties? That means a lot to you in the matter of future business. Check up your specialties and get in touch with Hindley. See how inexpensively you can be fully stocked up.

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COOK HEAT CONTROL

Automatically opens and closes the draft and check doors of hard fuel heating plants at the demands of a thermostat

QUICK TURNOVER
BIG PROFITS
DEPENDABLE PRODUCT

Write today for complete merchandising plan and prices

COOK ELECTRIC CO.
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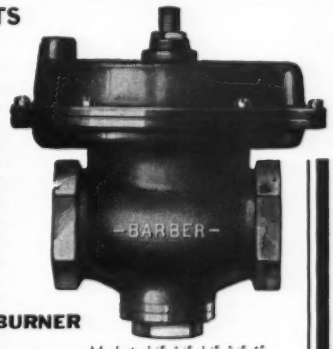
Controls for Heating—Ventilating—Air Conditioning

STEADY PROFITS SATISFIED CUSTOMERS

Every gas appliance user in your community is a potential customer for a BARBER GAS PRESSURE REGULATOR—if you will go after this business. They are easily installed; make satisfied customers and quick profits for you. Write for literature, prices and sales helps.



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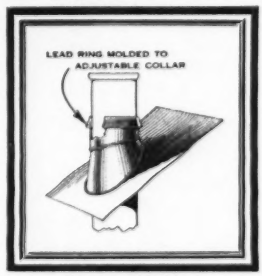
3702-4 Superior Avenue
CLEVELAND - - OHIO

Made in ¼", ⅜", ½", ¾", 1", 1¼", 1½" and 2" sizes



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NO. 1 ¼ TO ½ PITCH
NO. 2 FLAT TO ¼ PITCH

Furnished in Galvanized or Copper

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RATES FOR ONE $3. TO $5. PER DAY
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SENTENCES THAT SELL

Write one of these BLACK BOARD EPIGRAMS on your window or bulletin board each day. Many master plumbers and heating contractors find them real business getters.

Friendship and confidence are plants of slow growth.

* * *

Some men drop all their money trying to pick up more.

* * *

Men who know it all are seldom able to furnish the proof.

* * *

A crank may be the discoverer of a theory, before the public is ready to pay for it.

* * *

He isn't always happiest who wears the happiest look.

* * *

A weak-minded man is quite often head-strong.

* * *

The man who knows least is generally in a hurry to tell it.

* * *

No man sees his own faults through a magnifying glass.

* * *

The more money you have, the easier it is to practice economy.

* * *

The successful man is the first to recognize his own mistakes.

* * *

Contact with a sharp man will dull one's confidence in humanity.

* * *

It is the people that come early to avoid the crowd that makes the crowd.

* * *

Some men are long on energy, but short on the ability to use it.

* * *

Too many persons speak twice before they think.

* * *

Some men are so fixed that they have no use for a moving van.

* * *

The man, who admits that he is a chump, has begun to acquire wisdom.

* * *

It takes a man with sense to make a dollar go a long way.

* * *

A groundless rumor often manages to cover a good deal of ground.

* * *

Good-natured criticism is the kind a man always deals out to himself.

* * *

None are so blind as those who imagine they see it all.

* * *

Some men are born good, and few men make good.

* * *

Ungratefulness is a mean flaw in a person's character.

* * *

When pride turns a man's head, he is sure to look the wrong way.

* * *

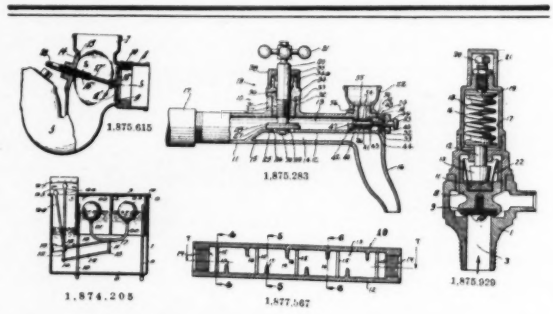
Silence is a difficult argument to beat.

NEW IDEAS FROM PATENT OFFICE

Plumbing Department

1,875,615. Combined Trap and Test Fitting. Edward Kennedy, New York, N. Y., assignor to The Kennedy-Steiner Corporation, Bronx County, N. Y.

1,875,283. Combination Faucet and Drinking Fountain. Gerome Trupiano, Brooklyn, N. Y.



1,874,205. Differential Pressure Gauge. Peter A. Nome, Brooklyn, N. Y., assignor to The Permutit Company, New York, N. Y., a corporation of Delaware.

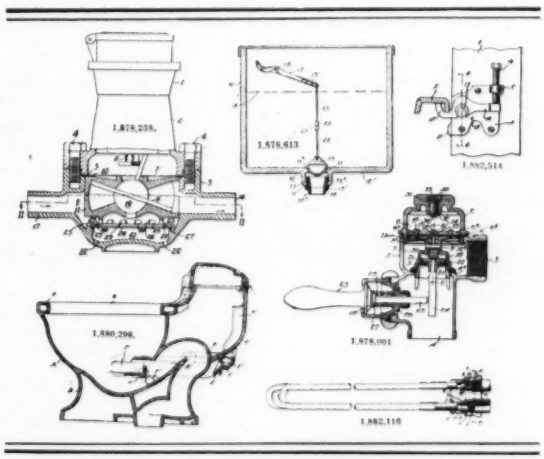
1,877,567. Hot and Cold Water Mixer for Showers. William P. Erbes, Los Angeles, Calif.

1,875,929. Valve Device for Connection to a Hot Water Supply. Luther D. Lovekin, Villa Nova, Pa.

1,878,238. Fluid Meter. Abram G. Holmes, Pittsburgh, Pa.

1,878,613. Flush Box. Joseph Werner, Perth Amboy, N. J.

1,882,514. Bathtub Support. John B. Martens, Cleveland, Ohio, assignor of one-half to Andrew Main, Cleveland, Ohio, and one-half to Evelyn G. Bradley, Cuyahoga Falls, Ohio.



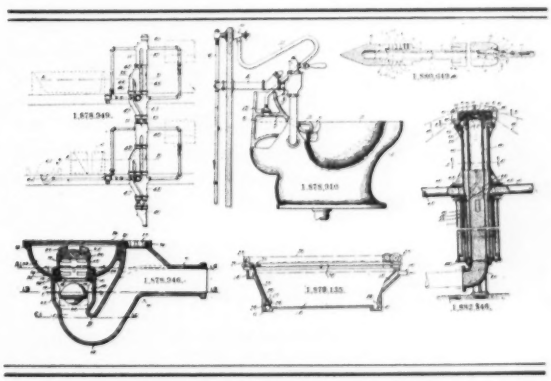
1,880,298. Water Closet. James M. Teahen, Detroit, Mich., and William Taylor, Windsor, Ontario, Canada; said Taylor assignor to said Teahen.

1,878,001. Flush Valve. William E. Sloan, Chicago, Ill.

1,882,116. Water Heater. George A. Bryan, Peru, Ind., assignor to Bryan Steam Corporation, a Corporation of New Mexico.

1,878,949. Plumbing System. Willard J. Luff, Cleveland Heights, Ohio.

1,878,910. Closet Bowl with Spray Receptor. Louis B. Stine, Niles Center, Ill., assignor to Crane Co., Chicago, Ill., a Corporation of Illinois.



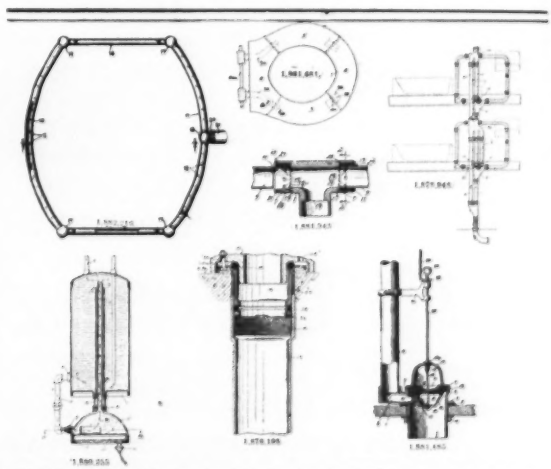
1,880,649. Soldering Iron. Lloyd W. Young, Buffalo, N. Y., assignor to The Prest-O-Lite Company, Inc., a Corporation of New York.

1,878,946. Floor Drain. Henry J. Luff and Willard J. Luff, Cleveland Heights, Ohio; said Henry J. Luff assignor to said Willard J. Luff.

1,879,135. Sedimentation Tank. John R. Downes, Middlesex, and Samuel F. Miller, Bay Head, N. J., assignors to Pacific Flush-Tank Company, New York, N. Y., a Corporation of Illinois.

1,882,546. Sewage Distributor. Charles Brossman, Indianapolis, Ind.

1,882,216. Bath Spray. Robert Findlay, Jamaica, N. Y.



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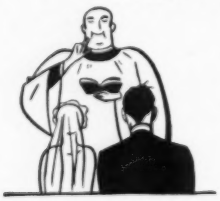
An Attractive ROOM and BATH for $3.50

HOTEL WILLIAM PENN
PITTSBURGH
1600 ROOMS . . . 1600 BATHS



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$1 a day more for two persons at Hotel Lexington. For instance, rooms at the minimum rate of $3 a day for one person, are only $4 a day for two.

And the Lexington is a new hotel, located in the Grand Central Zone, one block from fashionable Park Avenue.

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In Grand Central Zone, Lexington Ave. at 48th St.
NEW YORK CITY
CHARLES E. ROCHESTER, *General Manager*

1,881,681. Toilet Seat. Emil Klumpp, Detroit, Mich.

1,878,948. Plumbing System. Willard J. Luff, Cleveland Heights, Ohio.

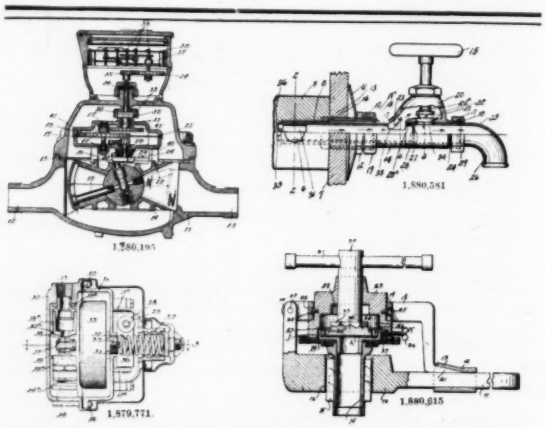
1,881,943. Joint. Harold K. Rader, Port Huron, Mich., assignor to Mueller Brass Co., Port Huron, Mich., a Corporation of Michigan.

1,878,195. Plumbing Fitting. Martin A. Sisk, Pittsburgh, Pa.

1,880,255. Electric Water Heater. Peter A. Johnson, Portland, Ore.

1,881,485. Flush Valve Construction. Allen R. Gilmore, St. Louis, Mo.

1,880,195. Liquid Meter. Horace Chrisman, Pittsburgh, Pa., assignor to Pittsburgh Equitable Meter Company, Pittsburgh, Pa.



1,880,581. Valve. Frank R. Tomlinson, Bay City, Mich.

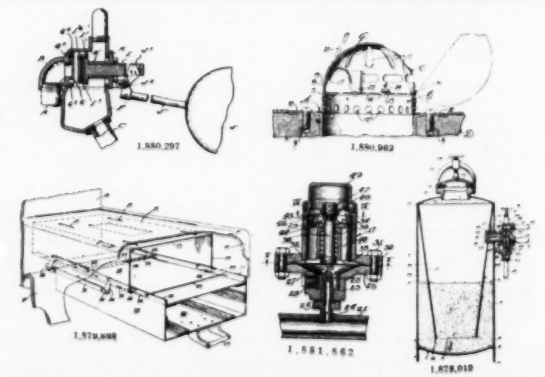
1,879,771. Mixing Valve. Morton O. Snediker, Chicago, Ill., assignor to The Powers Regulator Company, Chicago, Ill., a Corporation of Illinois.

1,880,615. Flush Valve Repairing Tool. James B. White and Maurice T. Gossett, Nashville, Tenn.

1,880,297. Flushing Apparatus. William Taylor, Windsor, Ontario, Canada, assignor to James M. Teahen, Detroit, Mich.

1,880,962. Deodorant Container. Harold I. Koppelman, Chicago, Ill., assignor to U. S. Sanitary Specialties Corporation, Chicago, Ill., a Corporation of Illinois.

1,879,888. Drawer for Kitchen Sinks. John R. Sieber



and Guy Randolph Elwell, Pittsburgh, Pa., assignors to Standard Sanitary Manufacturing Company, a Corporation of New Jersey.

1,881,862. Flow and Pressure Indicating Means. Harry M. Nacey, Chicago, Ill.

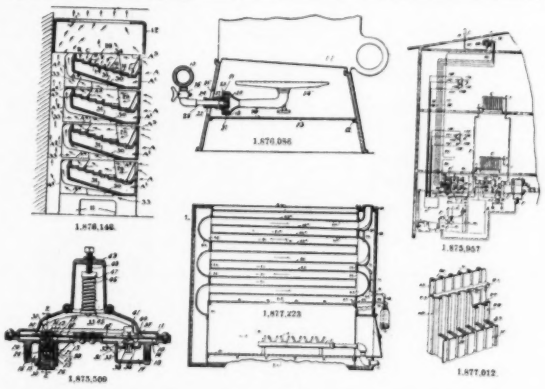
1,878,019. Water Softener Valve. Charles A. Stickney, deceased, Rockford, Ill., by James G. Tetlow, Rockford, Ill., administrator, assignor, by mesne assignments, to The Permutit Company, New York, N. Y., a Corporation of Delaware.

Heating Department

1,876,142. Humidifying Radiator. Andrew U. Jones, Montreal, Quebec, Canada.

1,876,086. Gas Burner. Willet E. Stark, East Cleveland, Ohio, assignor to The Bryant Heater & Mfg. Co., Cleveland, Ohio, a corporation of Ohio.

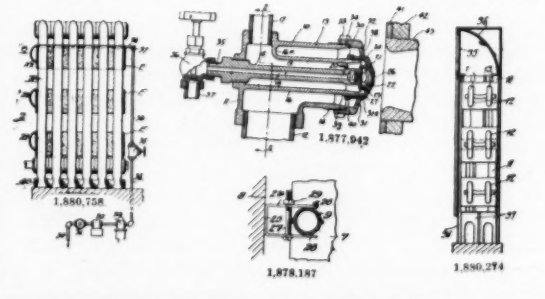
1,875,957. Temperature Control Mechanism for Heating Systems. Christian A. Thinn, Chicago, and Elbert A. Taylor, Arlington Heights, Ill., assignors to C. A. Dunham Company, Marshalltown, Iowa, a corporation of Iowa.

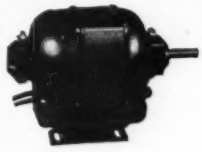


1,875,509. Pressure Regulator for Hot Water Heating Systems. Paul F. Shivers, Wabash, Ind., assignor to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware.

1,877,223. Method of Humidifying Air. Everett S. Buck, Cincinnati, Ohio, assignor by mesne assignments, to The Edwards Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio.

1,877,012. Radiator. Arthur B. Modine, Racine, Wis., assignor to Modine Manufacturing Company, Racine, Wis., a corporation of Wisconsin.





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BUFFALO, N. Y.

1,880,758. Humidifying Apparatus. George C. Brown, Worcester, Mass.

1,877,942. Combination Gas and Oil Burner. Albert W. Morse, Forest Hills, N. Y.

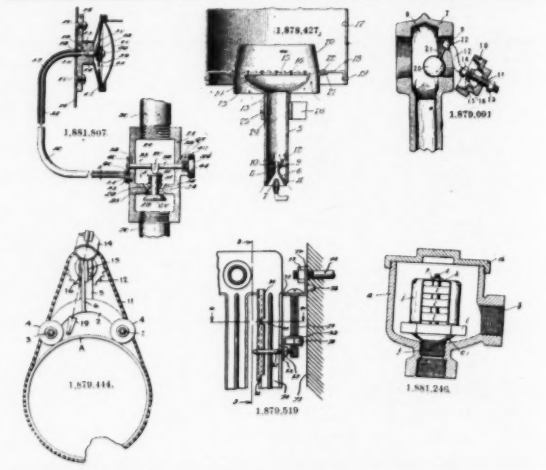
1,878,187. Radiator Hanger. De Witt C. Ruff, 2d, St. Paul, Minn.

1,880,274. Radiator. George H. Phelps, Warehouse Point, Conn., assignor, by mesne assignments, to American Radiator & Standard Sanitary Corporation, a Corporation of Delaware.

1,881,807. Remote Heat Control Mechanism. Rufus H. Maurer, Brookline, Mass., assignor to Spencer Thermostat Company, Cambridge, Mass., a Corporation of Massachusetts.

1,878,427. Gas Burning Heater. Thomas A. Ronstrom, Chicago, Ill.

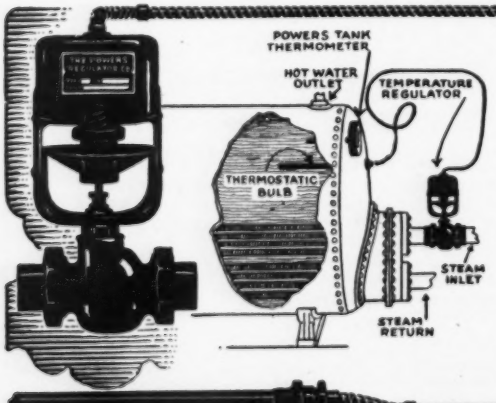
1,879,091. Automatic Air Valve for Hot Water Radiators. Frank Clancy, New York, N. Y., assignor to Sidney Michaels, New York, N. Y.



1,879,444. Circumferential Pipe Cutting or Welding Apparatus. William R. Ost, Verona, and Frank S. Lawrence, Dunellen, N. J., assignors to Air Reduction Company, Incorporated, New York, N. Y., a Corporation of New York.

1,879,519. Radiator Hanger. De Witt C. Ruff, 2d, St. Paul, Minn.

1,881,246. Thermostatic Valve Unit. William K. Simpson, Waterbury, Conn., assignor to Hoffman Specialty Company, Waterbury, Conn., a Corporation of Illinois.



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WANTED—MANAGER WITH EXECUtive ability thoroughly experienced in mill, mine, plumbing and heating supplies. Must be capable of directing office detail. Also need experienced salesman and bill clerk. Give references. Address Key 807, "Domestic Engineering," 1900 Prairie Avenue, Chicago.

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WANTED — CONNECTION DESIRED as manufacturers' representative calling on eastern Pennsylvania and Maryland jobbers of plumbing and heating material. Commission basis. Base at Harrisburg, Pa. Address E. Y. Saeger, 238 N. 17th Street, Camp Hill, Pa.

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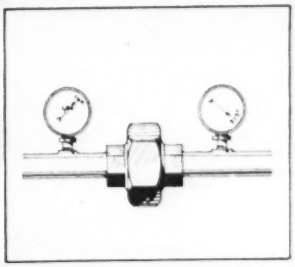

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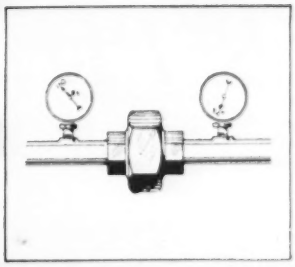

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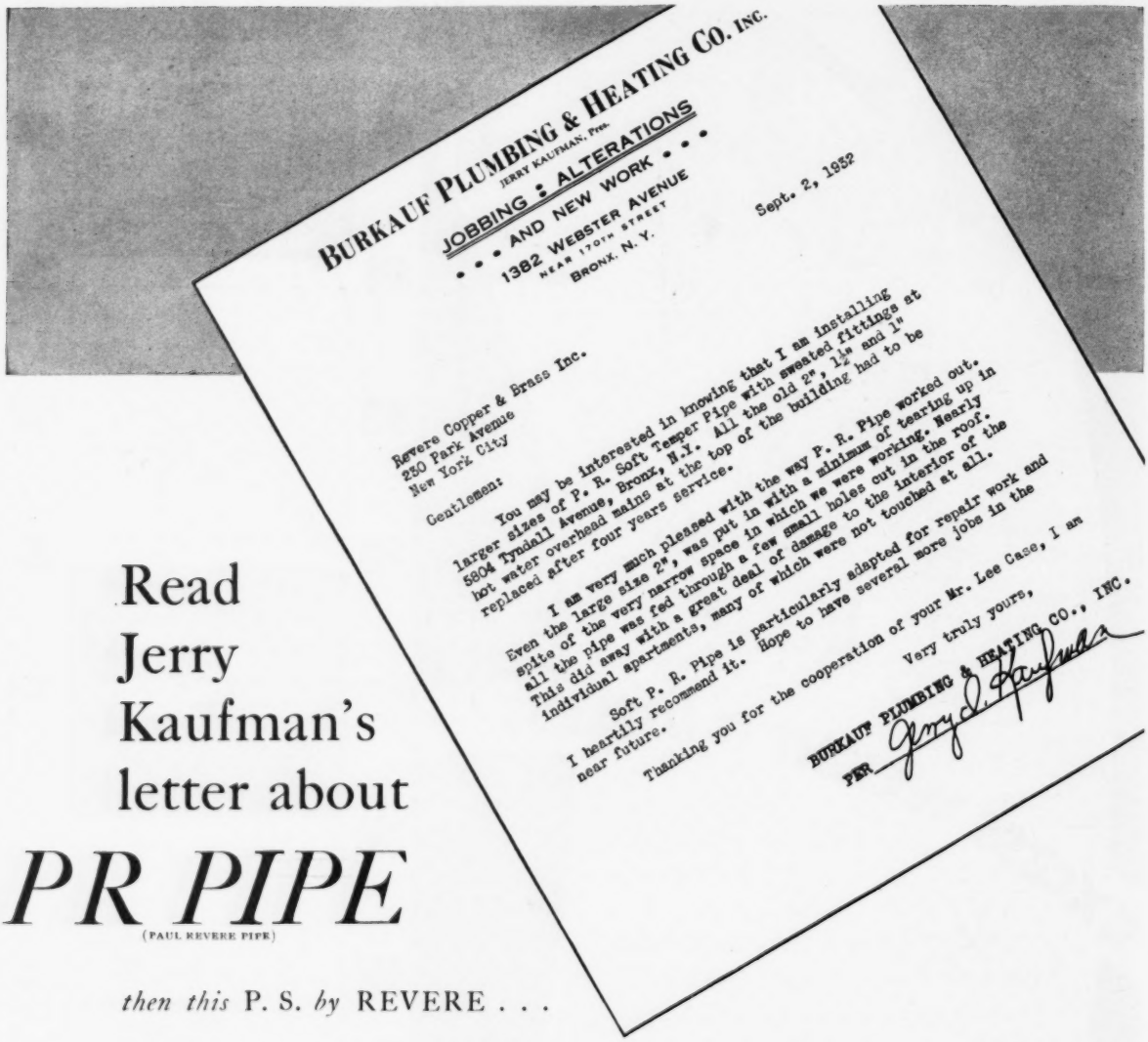
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PER Jerry L. Kaufman

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